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Air Furnace Has Underfeed Stoker

Design of Annealing Ovens, Temperature Regulating Equipment and Annealing Cycle Chart Also Feature New Malleable Foundry

BY BURNHAM FINNEY*

THE use of an underfeed stoker in the melting furnace is a comparatively new operation in malleable foundry practice, and one which is proving successful in the new foundry of the Berryhill Malleable Iron Co., Evansville, Ind. The annealing department of the plant also commands attention both on account of the design of the ovens and their equipment for regulating temperature and because of an ingenious method of keeping records of annealing oven cycles. The foundry is compact in its arrangement, so that material handling is reduced to a minimum.

The stoker automatically feeds the furnace with coal by means of rams operated by air cylinders, which are actuated by Cole automatic valves. The valves are operated by a ½-hp. motor attached to the valve stand. The stoker also has two adjustment devices which regulate the speed at which the main and lateral feeds operate, thus controlling the amount of coal burned. The laterals work the coal bed back toward the rear at the furnace end walls, the ashes being deposited on a "dead" plate and dumped into an ash pit.

The air furnace, which has a capacity of 15 tons, is of the reverberatory type, and has steel buckstays made of 4-in. x 6-in. angles bolted together with 3-in. spreaders. The buckstays are set on 4-ft. centers, and the sideplates are made in narrow sections, having lips extending around the angles to which they are clamped. Serving the furnace is a steel shell stack, 4 ft. in inside diameter, which extends down to the floor, not being supported on a brick base as is customary in most foundries. The furnace is charged with iron by a 2-ton electric crane, which handles buckets in which the charges have been made up.

Air Furnace Requires No Top Blast

Differing from the ordinary hand-fired furnace, the melting furnace at the Berryhill plant does not require any top blast. Instead, the flame is deflected to the bath by an angle in the roof which

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The Air Furnace Is Fired by an Automatic Underfeed Stoker. The laborer shown is dumping coal into a hopper which serves the stoker

holds the flame low in the furnace. With the top blast removed there is less oxidation, thus insuring a more uniform product, it is said, and making it possible to use a smaller percentage of pig iron with the sprues and scrap.

Coal for the stoker is dumped into a hopper by a laborer, who wheels it from the bins nearby. Each wheelbarrow en route passes over a scale, and the weights of the coal are recorded for coal ratio determination and accounting purposes.

Annealing Ovens Have Unusual Flue Construction

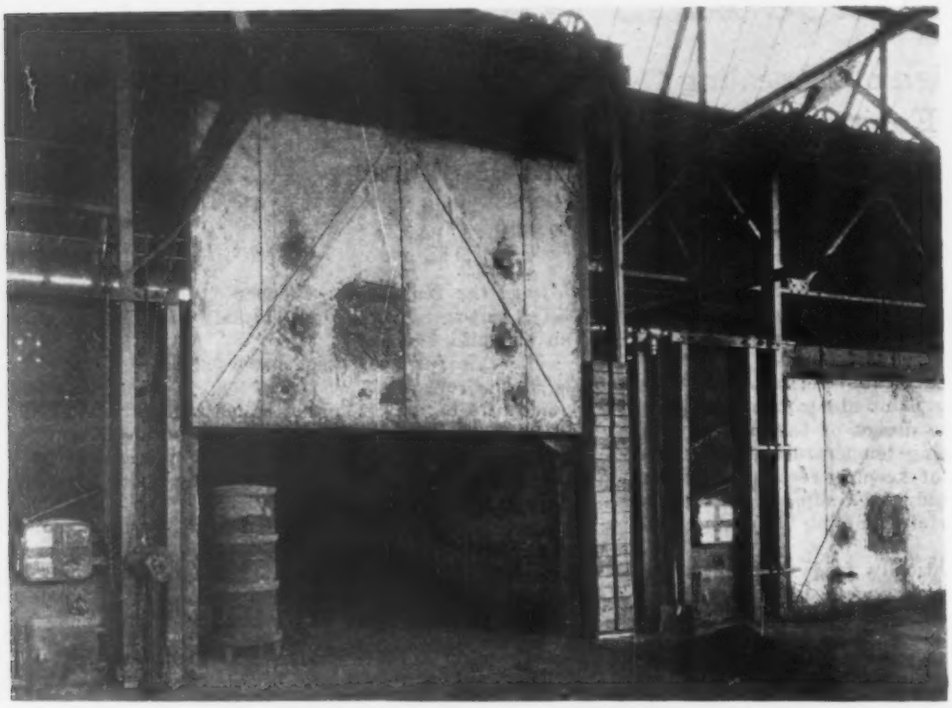
An outstanding feature of the Berryhill plant are three annealing ovens, 11 ft. 9 in. x 22 ft., which are constructed of fire brick. Their exteriors are reinforced with ¼-in. steel plates and I-beam buckstays, against which is laid sil-o-cel brick, 4½ in. thick, manufactured by the Celite Products Co., New York. This material acts as an insulator, holding the heat in the ovens and allowing them to cool slowly, thereby insuring good annealing and castings of uniform strength.

The oven floor consists of paving brick under which is a 6-in. layer of sil-o-cel concrete to insulate the bottom of the oven. All of this rests upon a reinforced concrete foundation 12 in. thick. The doors of the ovens, which are made of sil-o-cel concrete poured into a frame of channel iron, are counterbalanced by weights and are raised and lowered by a chain hoist.

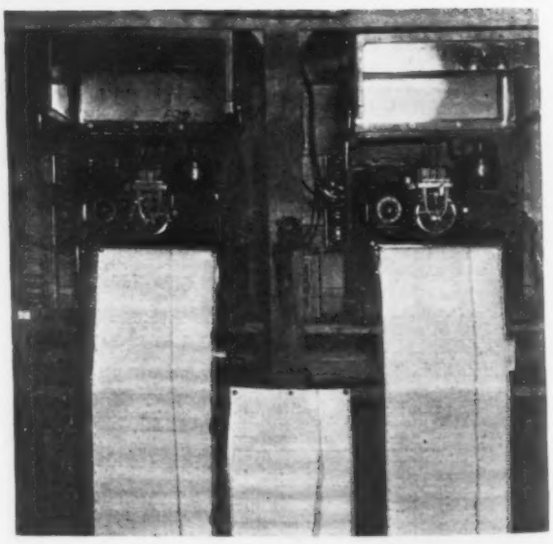
Ovens Have Pyrometer Control

Each oven has two fire boxes, one on the side and one on the front, in order to give more uniform heat. Instead of underground flues the ovens are equipped with flues built in the side wall. The bottom of the flues is of saw-tooth construction with 45-deg. slopes. The dust, soot and coal ash incident to combustion in the annealing oven are carried into the flues, drain down the slopes of the saw-tooth humps, and are removed through the oven ports or openings to the side flues along the oven floor. The contemplated installation of a powdered coal system prompted the construction of flues which would be accessible for the removal of flue dust. The burning of pulverized coal produces no cinders or ashes, but does produce their equivalent in fine ash or dust, which is deposited on pots and walls and in the flues. At the rear of each oven the flues enter a damper box which connects with a stack. There is a separate stack for each oven.

Each oven is equipped with five thermocouples. Four of the latter, two in front and two in the rear, project one stand in from each side wall. In addition, there is one in the center of the oven roof. The thermocouples are numbered in standard rotation and are connected through a multiple Leeds & Northrup selector switch to a direct reading temperature indicator. Certain thermocouples found to be the best guides to correct representative annealing conditions are led through the selector switch to two-point automatic Leeds & Northrup recording potentiometers of the malleable iron oven type. These record alternately for 5 min. on one and for 3 min. on the other, making an 8-min. cycle. The two thermocouples thus produce a visual record and firing guide. Instructions to firemen are given according to the recorders, temperature limits being indicated by brass pointers or markers on the scales of the recorders.



Each Annealing Oven Has Two Fire Boxes, One on the Side and One in Front, to Insure Uniform Heat. The flues, instead of being underground, are built in the side walls. On the bottom the flues have a sawtooth contour



Automatic Recording Potentiometers Produce a Visual Record of Oven Temperature for the Guidance of Firemen

Annealing Cycle Record Kept on Chart

Annealing oven operation cycles are reported on cards which are filed for future reference. The card furnishes a convenient form for recording pertinent

When They Leave the Molding Floor Castings Are Lifted to a Platform. From there they are distributed through hatches into tumbling barrels below

observations regarding the annealing process. It contains a plan of the oven, together with spaces for indicating the location of pots and stands. All stands and pots are marked with the furnace heat number. When the pots in a stand are identical in heat number, only one figure is recorded on the chart, but in mixed stands requiring more than one number, the entries are made in the order of the pots in the stand. Thus the identity of the pots is preserved, and recognition after annealing insured.

Signs, such as X, +, =, and —, are used to distinguish rush orders requiring immediate attention and to indicate special segregation, as in the case of very small castings which must be dumped carefully to avoid laborious separation from the cinders.

Flue changes cannot literally be shown on the chart, as one might gather from reading the heading over the furnace plan, but any changes in the location or size of opening of the ports, or a complete blocking off of the several ports opening from the floor of the oven into the side flues are sketched into the oven plan on the chart of the next oven anneal. Likewise, pyrometer changes are not actually registered on the card, but changes in thermocouple location are recorded.

At the right side of the report card is a "time-temperature annealing oven firing chart" on which can be charted the temperature and the time in hours of the annealing over operation cycle. This form provides a convenient method for comparing various annealing operations.

Molding Department Has No Partitions

Four rows of molding floors extend the entire width of the building, 120 ft., and have space for 40 molders. There are two gangways, with the two middle rows of floors facing each other but a few feet apart. Included in the equipment are molding machines of the traveling type, which can easily be moved about on the smooth concrete floor. Since there is no middle partition in the foundry, the molds are dumped in long rows so that the piles can be cut by a sand cutting machine. Albany molding sand is used to insure smooth surfaced castings.

Castings, when ready to leave the molding floor, are lifted to a platform by a Chisholm-Moore hand-operated crane equipped with an electric hoist. Through hatches in the platform the castings are dumped into tumbling barrels. After milling, the castings are discharged onto a bench, where they are sorted and inspected. Then they are sent to the grinding department and from there to the annealing ovens, which are directly opposite the hard milling and grinding departments, thus reducing material handling to a minimum. The castings are packed in round pots. The packing is settled by an air-operated vibrator, as a further precaution against warping in annealing. After annealing, all castings receive their final cleaning in a Sly tilted-type sandblast barrel. A board drop hammer is used to straighten castings requiring it. Chemical analyses of the pig iron and scrap, as well as two samples of iron from each heat, are made in a well equipped laboratory. Four test bars are cast from each heat and are broken in a testing machine to determine tensile strength and elongation.

In the pattern shop, which is 40 x 42 ft., the

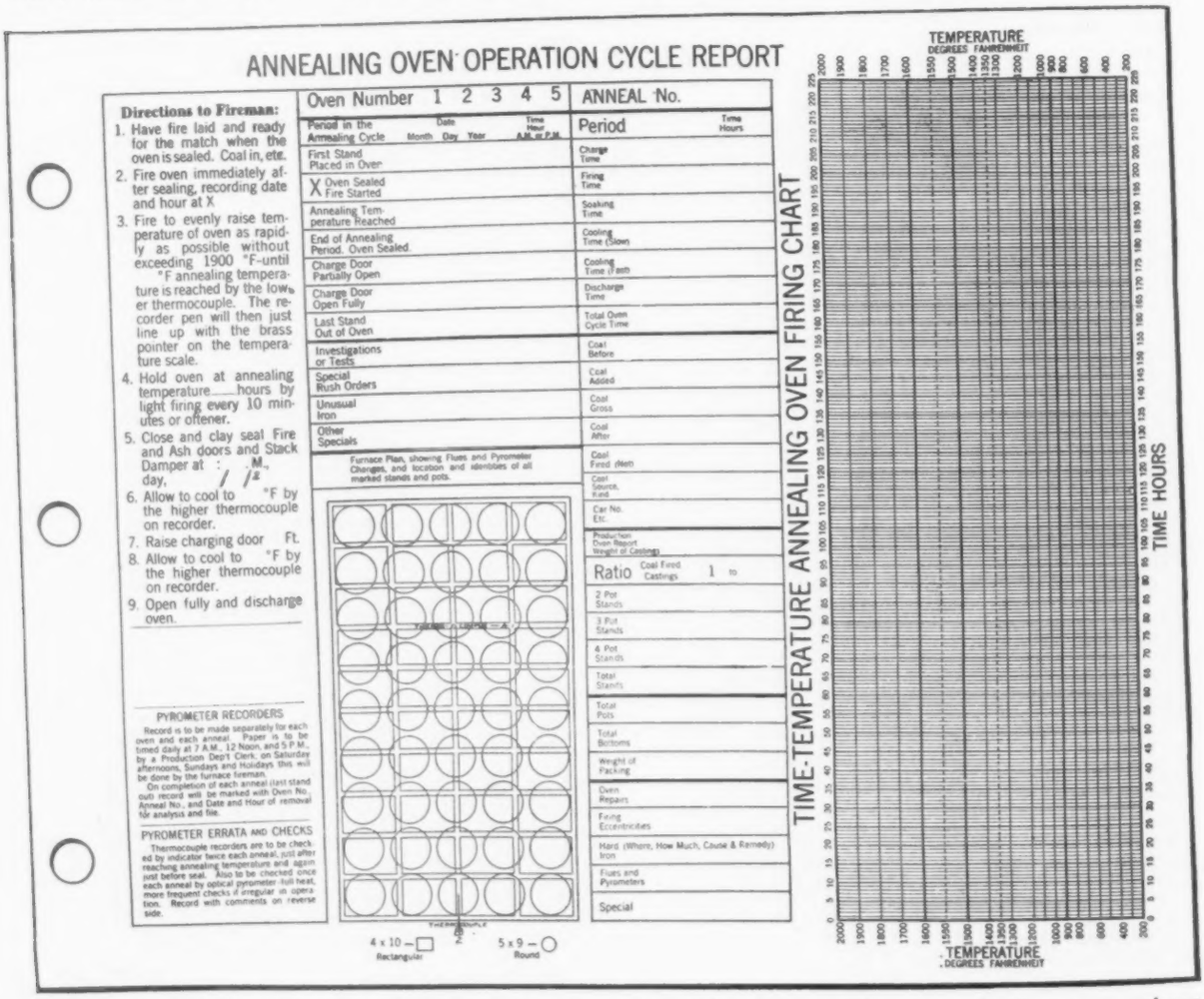
Sand Blast Equipment Is a Feature of the Cleaning Department

Four Rows of Molding Floors Extend the Entire Width of the Building. Since there are no partitions between floors mechanical sand cutting is facilitated

storage racks are of steel, to carry out the idea that the plant be fireproof throughout.

The fact that the entire plant is in one unit does away with unnecessary movements of materials from one department to another. For example, the hard milling department is immediately adjacent to the molding floor, with no dividing wall.

The core department is in a wing, 40 ft. square,


ANNEALING OVEN OPERATION CYCLE REPORT
Directions to Fireman:
1. Have fire laid and ready for the match when the oven is sealed. Coal in, etc.
2. Fire oven immediately after sealing, recording date and hour at X
3. Fire to evenly raise temperature of oven as rapidly as possible without exceeding 1900 °F-until °F annealing temperature is reached by the lower thermocouple. The recorder pen will then just line up with the brass pointer on the temperature scale.
4. Hold oven at annealing temperature hours by light firing every 10 minutes or oftener.
5. Close and clay seal Fire and Ash doors and Stack Damper at M., day, / /
6. Allow to cool to °F by the higher thermocouple on recorder.
7. Raise charging door Ft.
8. Allow to cool to °F by the higher thermocouple on recorder.
9. Open fully and discharge oven.
PYROMETER RECORDERS
PYROMETER ERRATA AND CHECKS
Oven Number 1 2 3 4 5
ANNEAL No.
Period in the Annealing Cycle
Date Month Day Year
Time Hour A.M. or P.M.
Period
Time Hours
First Stand Placed in Oven
X Oven Sealed Fire Started
Annealing Temperature Reached
End of Annealing Period. Oven Sealed
Charge Door Partially Open
Charge Door Open Fully
Last Stand Out of Oven
Investigations or Tests
Special Rush Orders
Unusual Iron
Other Specials
Furnace Plan, showing Flues and Pyrometer Changes, and location and identities of all marked stands and pots.
Charge Time
Firing Time
Soaking Time
Cooling Time (Slow)
Cooling Time (Fast)
Discharge Time
Total Oven Cycle Time
Coal Before
Coal Added
Coal Gross
Coal After
Coal Fired (Net)
Coal Source, Kind
Car No. Etc.
Production Oven Report Weight of Castings
Ratio Coal Fired / Castings 1 to
2 Pot Stands
3 Pot Stands
4 Pot Stands
Total Stands
Total Pots
Total Bottoms
Weight of Packing
Oven Repairs
Fixing Eccentricities
Hard. (Where, How Much, Cause & Remedy)
Flues and Pyrometers
Special
4 x 10 — Rectangular
5 x 9 — Round
TIME-TEMPERATURE ANNEALING OVEN FIRING CHART
TEMPERATURE DEGREES FAHRENHEIT
TIME HOURS
TEMPERATURE DEGREES FAHRENHEIT

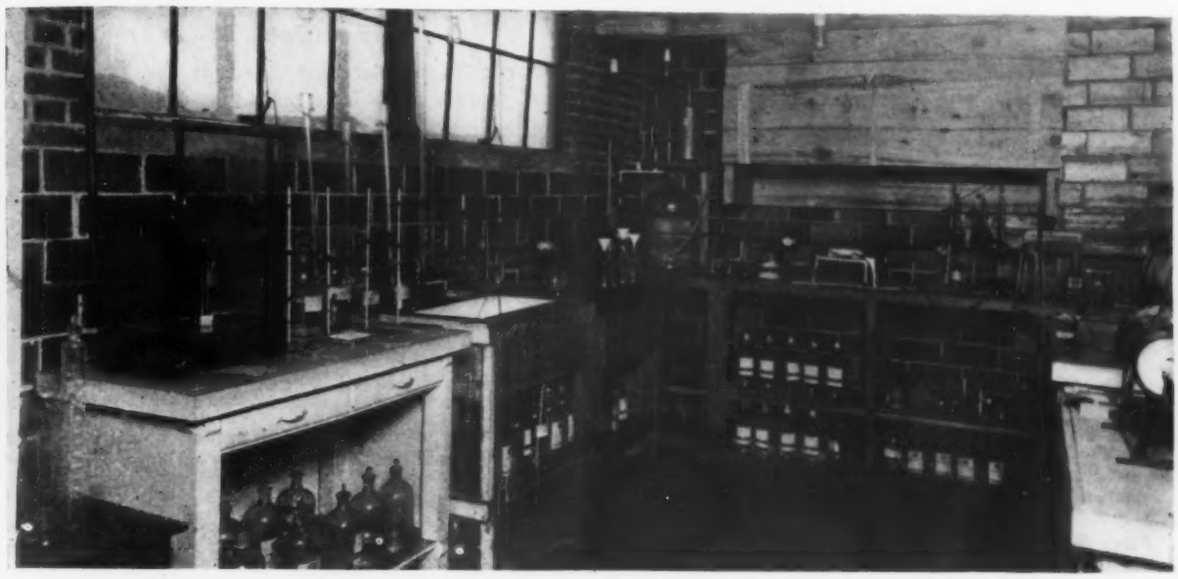
A Careful Record of Annealing Oven Cycles Is Kept on the Above Chart. The reports facilitate comparisons between different annealing operations

at the northeast corner of the plant. Its equipment consists of modern rack-type ovens, a Demmler core machine and a Simpson sand mixer. Adjoining it is a sand shed, 20 x 40 ft., which is divided into four sections. Here the molding sand, the core sand, the ground fire clay and the silica sand for furnace bottoms are stored. Along the east side of the foundry is ample storage space for pig iron, scrap iron and coal. A railroad switch track runs the entire length of the east side of the plant, so that two or more cars of coal can be unloaded into bins simultaneously. The arrangement of the coal in bins is such that an inventory can be taken at any time.

The main plant is 120 x 240 ft., and is of the Pond truss type of roof construction. The roof deck consists of clay book tile, which is laid upon tee-bars which run crosswise of the purlins. The air spaces in the hollow tile form an insulation against the heat of summer and the cold of winter. Since the framework of the building is of steel, the floors of concrete and the roof of tile, protection against fire has been assured.

Ample provision has been made for future expansion. The present building is situated in the center of a 9-acre tract, 320 x 1300 ft. Additional foundry units will be added at the north end and additional annealing units at the south end.

John H. Berryhill designed and handled the erection of the plant, and the structural steel work was supplied by A. C. Woods & Co., Rockford, Ill. Officers are John H. Berryhill, president; Daniel Wertz, vice-president; Edward Kiechle, secretary and treasurer.



Chemical Analyses of Pig Iron and Scrap, as Well as of Two Samples of Iron From Each Heat, Are Made In a Well-Equipped Laboratory. Four test bars cast from each heat are broken in a testing machine to determine tensile strength and elongation

Trade Association Limits

Outline of Permissible Activities Given Before National Petroleum Association

CAMBRIDGE SPRINGS, PA., April 20.—Addressing the semi-annual meeting of the National Petroleum Association here last Thursday, Nathan B. Williams, associate counsel National Association of Manufacturers, analyzed in detail the rights of the modern trade association and described how such an association operates. He pointed out that many association executives are without clear appreciation of the fundamental considerations which should surround and give definite control to the activities of essential business organizations.

Mr. Williams said that trade associations must not make agreements or conspire to fix prices, limit production, restrict sales, divide territory, or restrain lawful competition in interstate commerce. He then set forth twelve outstanding legitimate activities of trade associations. Among them are the maintenance, collection and distribution of timely unidentified information as to the cost of the product, the price received for it in closed transactions, volume of production and stocks on hand.

The subject of statistics and production, stocks and prices has particularly been under attack by the Department of Justice for several years, Mr. Williams said. But, in the Supreme Court decisions mentioned, the rule of law has now been clearly established that such activity is not unlawful within the limits outlined, even though the natural tendency of economic law is to bring about natural conditions of full information and stabilization of prices.

Changing Character of Immigration

One result of the immigration restrictive laws has been to increase the proportion of professional immigrants, through reducing the dilution of lower-type incoming aliens. Of the total immigration in the five fiscal years, 1910 to 1914 inclusive, only 1.2 per cent represented professional people. In the six fiscal years from 1920 to 1925 inclusive the proportion of professional aliens entering has been 2.9 per cent. These figures, based on an analysis made by the National Industrial Conference Board, are supplemented by the statement that slightly above 80 per cent of the total number of professional people coming in in each of the two periods have remained in the United States.

In only one year of the recent group was the number of professional aliens coming in much greater than in the previous years. The average for the six years was 14,965, against an average of 12,425 in the preceding period. The highly increased ratio arises from the fact that total immigration in the six recent years has averaged only 511,486 per year, compared with 1,034,940 per year in the earlier period.

During the four most recent years of the six-year period, the proportion has been even higher, due in part to the large influx of professional people in 1923-24 and in part to the fact that the restrictions were drawn more closely in this later period. Of 1,833,685 immigrants in those four years, the professional total was 62,756, or 3.4 per cent.

Scrutinize Industry's Problems

Management Questions, Industrial Relations, Agriculture, Taxes, Crime and International Trade and Politics Discussed at Metal Trades Meeting

THE problems of industry in their broadest interpretation were discussed at the twenty-eighth annual convention of the National Metal Trades Association, held at Hotel Astor, New York, April 15 and 16. Besides treating such intimate shop problems as foremanship training, compensation insurance, accident prevention, and industrial relations, the program embraced topics which indicated a comprehensive grasp of industry's dependence on general economic and political conditions both in this country and abroad. The seriousness of the agricultural problem was discussed in two papers, the crime situation was treated by two other speakers, the alarming increase in State and local taxes was the subject of another address. The changing aspect of international affairs, also, was ably covered by an address on the problems of world finance and a discussion of ominous political developments in China.

The registration at the convention was 277, a gain of 25 over the attendance one year ago.

IN addition to outlining the activities of the association during the past year, Paul C. DeWolf, president, in his annual report paid a tribute to the open shop in industry. His remarks, in part, follow:

Pays Tribute to Open Shop in Annual Report

"The great war and the years immediately following, which represented the peak of industrial activity and the low dip in industrial depression, have influenced in a very marked degree industrial practices of our present day.

Output Per Man Has Increased

"As a result of an inquiry made at the beginning of the year, there was reported an almost unanimous agreement of an increased production per man in the shops of our members. In most instances this increase is accounted for in two ways: First, through closer cooperation between the management and the employees; second, through improved equipment, increased study and closer supervision. In a great number of instances, this has meant very marked changes in equipment—the replacing of a great deal of the older plant equipment with new equipment of greater productive capacity.

Business Outlook Improved

"It has been the practice of our association to make inquiry of our members each year concerning general business conditions. The value of these surveys is impressed upon me very forcefully because it has been my privilege to compare them from year to year, and I wish to assure you that the information which you contribute as a member is frequently very helpful to other members or students of economics who desire enlightenment. In recent years the questionnaires have been limited to only a few questions. The replies received this year totaled 440. The first question asked was: 'How is business?' Thirty-one reported, 'Excellent;' 202 reported, 'Very good;' 186 reported, 'Fair,' while only 21 reported, 'Poor.'

"The next question was: 'How does business compare with six months ago?' One hundred and ninety-three reported, 'Better;' 198 reported, 'Just as good,' while only 48 reported, 'Not so good.' It is interesting to note here that a year ago 178 reported, 'Better;' 162, 'Just as good,' and 106 reported 'Not so good.' In other words, this year's survey shows an improvement in conditions over last year.

"The third question was: 'What is the outlook for the next six months?' Thirty-four reported, 'Excellent;' 211 reported, 'Good,' while 190 reported, 'Fair,' and only five reported, 'Poor.' Here again it is interesting to note that the predominance is in favor of 'Good,' whereas a year ago the predominance was with those who admitted the business outlook was either poor or only fair.

Greater Scarcity of Skilled Labor

"The fact that labor conditions and business conditions interact as they do led us to ask what kind of labor was found to be scarce. The great scarcity seemed to be with skilled workmen. One hundred fifty-six reported no scarcity, 142 reported a scarcity of skilled workmen, 29 reported a scarcity of semi-skilled and common labor, and 113 made no reply. By way of comparison, a year ago 332 members stated there was no scarcity at all; 101 reported a scarcity of skilled labor, and 12 a scarcity of common labor. This shows an imperative need for the further extension of training activities.

Increase in Membership

"At our convention last year, we reported a membership of 1062. Today our membership is 1056. During the year we received 63 applications for membership, and 41 resignations, making a net increase in the year's activity of 22. We always have some resignations previously received being held in abeyance, in the hope of reinstatement. The apparent difference in membership is the result of absorbing a number of these resignations.

A Year of No Strikes

"For the first time in the history of our association, we have passed through an entire year without a single strike in the plant of any member. This, in my opinion, speaks well for the splendid spirit of cooperation which exists between our members and their individual employees and, at the same time, indicates the value of our constructive activity. Contrast with this the fact that the Conciliation Board of the United States Department of Labor had 550 strikes and controversies brought before it for their intercession. Furthermore, it is generally conceded that only a fraction of the strikes and controversies in the country are actually brought before this board.

Small Percentage of Union Workmen

"According to the United States census of 1920, there were in this country about 41,500,000 people that were classified as gainfully employed. Of this number, 3,471,197 either claimed to be members of, or were claimed as members of an organized labor movement, so that not less than 38,000,000 of the total number gainfully engaged were without affiliations with any kind of labor organization. The ratio is over 10 to 1 in

favor of the free individual and justifies our claim that America is an open-shop nation.

Increased Productivity of Open Shop Industries

"When the same workman thinks of himself in relation to the American employer he finds he is in a measure in a partnership. As a matter of fact, in this country over 15,000,000 people are stockholders in the industries and utilities of the nation, the larger part of whom are wage earners. He finds in a great many cases that he and his family are protected against the day of misfortune, both by compensation and life insurance. Moreover, he will find in reviewing the entire situation that with his employer he has worked out cooperatively a production program that has resulted in increased earnings for him with reduced costs of the product on which he works and, in many instances, a reduction in working hours during the last 10 years. This is illustrated very aptly in the automobile industry, where wages compared with 1913 have increased 140 per cent and the cost of the automobile itself has been reduced 29 per cent. This, of course, is a representative open shop industry. Taking a representative closed shop industry, like anthracite mining, we find that, while wages have increased 190 per cent, the cost of the product to the consumer, who, in the final analysis, is also a workman, has been increased 102 per cent."

PAUL T. NORTON, *who has been elected president of the National Metal Trades Association, is president Case Crane & Engineering Co., Columbus, Ohio. Mr. Norton was born in Elizabeth, N. J., graduated from Princeton University in* 1885, *and served his apprenticeship in the shops of the Central Railroad of New Jersey.*

Mr. Norton has held a number of important executive positions with different manufacturing and mining corporations in New York, Philadelphia, and the Middle West. The Case Crane & Engineering Co., of which he is now president, operates two factories at Columbus for the manufacture of Case Crane and Kilbourne-Jacobs products, consisting of electric overhead traveling cranes, fabricated structural steel, railroad cars, and contractors' and material handling equipment, such as industrial cars, tractors, motor truck bodies, wheelbarrows, warehouse trucks and baggage wagons.

For a number of years he has been active on the administrative council of the National Metal Trades Association, and in the past four years has served as vice-president. He was elected president to succeed Paul C. DeWolf of the Brown & Sharpe Mfg. Co., Providence, R. I.

Management's Contribution to American Industry

"AS a muscular process labor does not differ greatly in effectiveness whether in England, China or the United States. Where applied, however, to scientific principles of management and machinery, a great difference is immediately apparent," said John W. O'Leary, president Chamber of Commerce of the United States in an address on "Management's Contribution to American Industry."

"The tremendous development of primary horse power per workman; the discarding of good machinery for better; the opportunity for the individual workman to earn in proportion to his production; the expenditure of vast sums for technical education, scientific research and experimentation, and many others too numerous to mention are management's contribution to production.

This has resulted in the present high standard of living, together with a general reduction of working hours, and with a decrease of unemployment, notwithstanding the restrictive methods applied by organized labor.

"Management has further contributed to increased production through its application to the labor problem. To transfer the viewpoint of labor from that of opposition to the employer, into one of cooperation and enthusiasm for the product, is not only possible, but is being realized daily. While management has of necessity assumed the responsibility for the control of business, it has at the same time made it clear to labor that it desires to manage on a just and equitable basis. It has also opened the door for employee ownership, which has been taken advantage of to a degree beyond expectations. It has been responsible for introducing social and economic factors such as insurance, pensions, safety, shop comforts, and conveniences which make labor relations an interacting process.

Maintaining Continuity of Employment

"Akin to this is the problem of maintaining continuity of employment. Great progress has been made in this direction. The shoe industry, the automobile industry, the agricultural implement industry, and others are outstanding illustrations of this. A number of years ago, it was to be expected that the manufacturer of agricultural implements would practically close down the plant twice a year. By extending the points of distribution, universalizing the product, the agricultural implement industry of today is on the basis of 'all the year around' operation.

"Another great contribution of management seems to me to relate to the problem of finance. Your morning paper carries statements of managers as the basis for financing and operating industry. When, as sometimes happens, an industry gets in a bad way financially, management is transferred from the field of banking to the field of production. Why? Not because a foundry needs a knowledge of banking, but because the fundamentals of management are applicable to either bank or foundry. One of the outstanding contributions of management to the problem of finance is to be found in the automobile industry. The continued prosperity of the automobile industry in which nearly 90 per cent of the sales are on the deferred payment plan, is probably due to incorporating in the management program a financial plan to the end of moving the product.

Perfecting Distribution

"Along with other problems of management has come the problem of distribution, which at one time, generally speaking, was in no way related to production. Now the same man responsible for production as plant manager, has the added responsibility of distribution, through agencies that directly represent or are in direct contact with the factory and in many instances under factory direction.

"Management has recognized the futility of single-handed efforts in this field. Our own association is an excellent example of coordinated efforts for the welfare of employers and employees. In addition to this, and this is the astounding thing to the British labor missions and the group of British engineers who have visited our country, the wages of the American workman are the highest in the world and there is no other ex-

planation for this fact except the consistent, conscientious application of management to the solution of its labor problems.

Industry Is on Threshold of Intensive Business

"We live in a day of big business, and of big men, and of big ideas. We live in a day demanding fast movement. We use the air-mail routes for greater speed. Transporting coal is too slow; we build the electric plant at the mouth of the coal mine. This modern frame of mind and developed habit is in itself a problem to management, namely, that of unifying thought and effort in the world's business. As the men of yesterday were big enough to recognize the changing order, so the management of today is sensitive to the fact that undeveloped, natural resources do not increase; that new fields are constantly diminishing, and that we are on the threshold of intensive business."

Compensation Insurance and Foremanship Training

A SURVEY of compensation insurance was presented by W. E. Odom, director of the association's department of industrial relations. It is estimated that in 1925 there were 16,000 accidents in the shops of members, costing $1,500,000. The provisions of State workmen's compensation laws are widely divergent, and there are also considerable differences between the premium rates charged by various types of carriers. The rate for machine shops in Ohio, where there is a monopolistic State insurance fund, is only 29 per cent of that in New York where the insurance is in private hands. The schedules of benefits, Mr. Odom said, are approximately the same. An investigation among members of the association showed that the rate of mutual insurance companies was 18 per cent lower than that of stock companies, that of State funds was 34 per cent lower; that of reciprocal associations 44 per cent lower, and that of self insurers 47 per cent lower. A self insurer, the speaker pointed out, runs the risk of a catastrophic accident which might wipe out its entire insurance reserve. Reciprocal associations are voluntary groups of companies which share each others' risks.

Self Insurance

Self insurance as applied by the Bucyrus Co., South Milwaukee, Wis., and Evansville, Ind., was outlined by Col. W. M. Myers, general manager of that company. At the Wisconsin plant the plan has been in effect since March, 1913, and at Evansville since May, 1920. The disadvantage of the previous method, according to the speaker, was that it prevented direct contact with employees, delayed and hampered relief work and sometimes resulted in unsatisfactory settlements. The natural result was a certain amount of malingering and the creation of antagonism among workmen. The company aims to allay fears as to uncertainty of compensation and to remove the incentive for engaging attorneys. From 1913 to 1920 it had only 18 contested cases before the Wisconsin State Industrial Commission, of which 14 were decided in its favor and four against the company. Since 1920 there have been practically no contested cases.

Association Insurance

A stock company formed by a State-wide association for the purpose of handling compensation insurance was described by Fred G. Rees, underwriter Pennsylvania Manufacturers' Association Casualty Insurance Co. This venture was started on Jan. 1, 1916. In 1924, the last year of record, its premiums totaled larger than those of any other carrier of similar insurance in Pennsylvania, and its expense ratio was the lowest.

The history of a local reciprocal association was recounted by W. F. Herst, Wolverine Brass Works, Grand Rapids, Mich. Formed on Jan. 1, 1921, by eight companies with 700 employees and an annual premium income of $7,000, the association in 1925 embraced 48 companies with 4500 employees and had a premium income of $33,000.

Effect Reduction in Compensation Insurance Premiums

Frequently a company which has spent much on safety devices is penalized because it does not conform with insurance standards, said J. B. Doan, American Tool Works Co., Cincinnati, in delivering the report of the committee on accident prevention, of which he is chairman. The committee and the association's field man, William H. Doolittle, have done much to rectify this situation in members' plants. Their study has been centered on taking such measures as would result in the greatest reduction in premium at the least expense. As a consequence members have found it possible to reduce their premiums $300 to $3,000 per annum each.

No particular method to improve industrial relations will be uniformly successful, said J. D. Cox, Jr., Cleveland Twist Drill Co., Cleveland, in delivering the report of the committee on industrial relations. A survey of all member plants has been undertaken and so far 300 have been visited. Mr. Cox listed numerous methods employed to improve the relations between management and employees.

Course in Foremanship Training Being Prepared

A book on foremanship training, now being prepared by the committee on industrial education, is expected to be completed late this year. The training of apprentices, where undertaken by branch associations, has proved a great success, and other branches were urged to adopt the plan by John G. Spence, Norton Co., Worcester, Mass., chairman of the committee on industrial education. An apprentice record book has been developed by the committee, he said, and is now available to members.

No course in foremanship training will be submitted to the membership, Mr. Spence said, unless it promises to reduce the cost of production. Such training is necessary, he stated, because foremen are too frequently "pitchforked" into their jobs without proper preparation. The restriction of immigration has not only reduced the supply of common labor but is commencing to make itself felt in a scarcity of skilled labor. This shortage of labor, he said, will mean more automatic and semi-automatic machinery, and will place still greater responsibilities on the foremen.

A successful plan for training foremen was described by T. H. White, manager industrial relations department, American Multigraph Co., Cleveland. Since 1921 this organization has held a weekly class for foremen on company time.

Agricultural Situation Demands Solution

"THE Conference Board believes that the solution of this problem, the readjustment of our agriculture to our industrial, financial, commercial life, is one of the greatest problems facing the country today," said Virgil Jordan, chief economist National Industrial Conference Board, New York, in discussing "The Nub of the Agricultural Problem." "It involves," he said, "the political unity of our people because persistent economic inequities underlie political unrest and have in the past been the most fruitful source of political disruption and agitation. It involves the social welfare of our people because when we speak of the farm problem in human terms we are speaking of 32,000,000 people who are nearly a third of our population, and because the farm has been the source of our typical, independent, self-reliant, vigorous American stock. . . .

"We business men and manufacturers, and bankers of the teeming cities, have forgotten how much our welfare depends upon that of the farmer. We have grown accustomed to thinking that industry and trade and finance can be prosperous even though our farms and farmers are not. This may be true for a short time, as it appears to have been true during the past two years. But there is no ground for believing that there is a divine law assuring the immunity of industrial and business prosperity from adverse influences or proclaiming the complete economic independence of agriculture and trade.

Progressive Retrogression of Agriculture Since 1900

"The Conference Board's study indicates that since about the beginning of this century, or coincident with the beginning of the most rapid development and expansion of American industry and trade, there have been in operation forces and conditions which have tended to create a progressive maladjustment between the position of agriculture and that of other branches of our economic life," asserted Mr. Jordan. "This maladjustment is reflected in the fact that our agricultural plant and its production have tended to contract relative to the growth of our population since about 1900. . . . I wish to emphasize that I am speaking now of our agricultural plant, not of the agricultural working force, for that is quite a different story. The output per man engaged in agriculture has increased rapidly. If there is any inefficiency in our agriculture, it is not one of labor, but one of plant operation.

"The backwardness of our agricultural development in the past quarter century is reflected also in the increasing effectiveness of the competition of foreign producers in both foreign and domestic markets, as shown by the downward trend of our agricultural exports and the rise of agricultural imports after 1900.

"It is reflected also in the rapid rise in capital, labor and operating costs relative to the prices per unit of product since the beginning of the century.

"It is reflected in the persistent and increasing disparity between the per capita share in the national income of those engaged in agriculture compared with that of those engaged in other major occupations.

"It is reflected in the wide disparity between the return for investment and labor in agriculture and that in other industries.

"It is reflected in the rapid increase in the rate of farm bankruptcies compared with that of commercial failures since pre-war years.

"It is reflected, finally, in the wide disparity between the per capita income of the farm population and that of the non-farm population in the dominantly agricultural sections of the country."

The Government's Plan for Adjusting Production

"Adjusting Production to Market Demand" was the subject of an address by Dr. William J. Spillman, Department of Agriculture, Washington. His department now issues an "outlook" report every February, estimating the market demands for the ensuing year for each of the important farm products. If an increase or decrease in production appears to be advisable, it is urged. About the middle of March an "intentions" report is issued. This is based on the expressed intentions of some 50,000 farmers, all over the country.

This plan is satisfactory in guiding the adjustment of production in the minor crops. Wheat, cotton, corn, oats and hay, however, each occupy more than 40,000,000 acres of land. No other crops can be substituted for them in sufficient quantity to bring about the reduction of acreage necessary to protect the prices of those products.

World Competition Growing Keener

"COULDN'T we at a pinch do altogether without foreign trade in this magnificent, self contained country of ours? It's only 5 to 10 per cent of our total business." In answering this hypothetical question W. Irving Bullard, vice-president Merchants National Bank of Boston, whose topic was "The Problems of International Finances," said: "Five to 10 per cent is a marginal factor which might have much to do with our national showing as to home prosperity. To forfeit it all—a total of in-and-out trade that in 1925 reached $9,130,000,000—would mean much dislocation and disappointment in terms both of capital and labor, of dollars and jobs. . . .

"Our total yearly balance of trade and income, both physical and financial, visible and invisible, is sure to continue large, and that leads us squarely up to an equation which involves a considerable problem for the longer future. Just now, in large part, Europe borrows that she may buy. Until recovering Europe has much more fully developed its buying and consuming power, we may virtually have to continue aiding it with future remittances if we do not want our commodity export stream to dwindle suddenly and seriously. Were our investors to cease lending, it might have a distinct reaction upon many of our industries and their products.

"Of course, we can't get any appreciable amount of gold in balance. Europe hasn't it to spare; we don't want it. The classic equation remains—goods and services the sole liquidating factors left. Therefore, we must export less or import more or balance the equation by continued or even expanding lending. Our business interests now sending 1,100,000 foreign trade inquiries a year to our busy Department of Commerce don't want to relinquish those ambitions. Our farms may for some years yet have a surplus to sell. Hence the inevitable trend toward increased imports.

Scales Tipping Toward Import Side

"In the first two months of 1926 we actually recorded an excess of merchandise imports over exports of $55,600,000. The $19,600,000 import excess in February was the second for that month in more than 30 years. Quite obviously there is an increased inflow over our tariff dikes. As yet, it is not a relatively appreciable or alarming item. . . . But the plain fact is there to be cited and to be weighed by statesmen and economists and men of business that the scales are tipping toward the import side. . . .

"There is still some lingering foreign currency depreciation which puts us at a trade disadvantage, however much more it hurts the offenders in the long run. There is also to be noted a distinct disparity in labor costs. . . . We face a certain added competition in cheaper foreign labor as well as, in diminishing degree, in cheapened foreign currencies.

Prices Declining in Step with World Trend

"Likewise we have of late witnessed a gradual recession in our commodity price level, with somewhat disquieting reactions in certain business lines. We have simply had to catch step with a world trend. Price lines abroad tended downward last year, while ours held steady. The increased disparity between them and our levels was one of the factors tending toward a greater inflow of imports, despite our tariff. Now that discrepancy appears to be in process of correction.

"For the longer future, as to which exact surmise is not now worth while, it seems clear enough that we must meet these various and successive problems by intelligent study, by any necessary readjustment, by individual and collective preparation for a more severe and strenuous international trade competition. Our mastery of mass production, maintenance of our skill and vigor of both capital and labor, our versatility in adaptation, may all have to come into fuller play."

America Must Guard Interests in China

The peace of the world and the development of a vast potential market are both dependent on America's attitude toward China, according to Dr. Clarence H. Robertson, Shanghai, who delivered an address on "Scientific Advances in China." China's resentment against the invasion of her sovereignty by Western nations, through the extortion from her of numerous

New Officers of National Metal Trades Association

President

Paul T. Norton, president Case Crane & Engineering Co., Columbus, Ohio.

First Vice-President

Harold C. Smith, president Illinois Tool Works, Chicago.

Second Vice-President

J. G. Benedict, president Landis Machine Co., Waynesboro, Pa.

Treasurer

J. W. O'Leary, president Arthur J. O'Leary & Son Co., Chicago.

Councilors for Two Years

Paul C. De Wolf, vice-president Brown & Sharpe Mfg. Co., Providence, R. I.

J. A. Horne, vice-president Yale & Towne Mfg. Co., Stamford, Conn.

Robert Biddle, president Biddle-Gaumer Co., Philadelphia.

C. C. Gibson, president Mullins Body Corporation, Salem, Ohio.

M. E. Forbes, president Pierce-Arrow Motor Car Co., Buffalo.

P. H. W. Smith, vice-president Standard Underground Cable Co., Perth Amboy, N. J.

Councilor to Fill Unexpired Term of J. G. Benedict

William Goodman, vice-president Worthington Pump & Machinery Corporation, New York.

Honorary

Justus H. Schwacke, president William Sellers & Co., Inc., Philadelphia.

concessions and privileges, is deep-seated, as evidenced by the Shanghai demonstration of a year ago. Soviet Russia, by giving up all its concessions, has replaced the United States as the most popular foreign country in China, and is industriously planting the seeds of bolshevism among the Chinese in the hope of eventually striking a death blow at capitalism with the help of oriental millions.

Federal Economies Wiped Out by Increasing State Taxes

A reduction of the national debt by the Federal Government at the rate of nearly $1,000,000,000 a year is being more than wiped out by an annual increase of $1,250,000,000 in the expenditures of State and local governments, said Hon. Ogden L. Mills, member of Congress from New York, in an address on "The Real Tax Problem in the United States." State and local governments are not only spending every nickel collected in taxes but are borrowing besides. The important question is not what activities are undertaken by a government, he asserted, but what degree of economy is exercised in carrying them out. State and local taxes are inequitable and unscientific and fall largely on real property. The State and local governments lack adequate cost ascertaining machinery; they are in great need of budget systems similar to that employed by the Federal Government.

Steel Treaters as Non-Producers

Their Relation to Production and the Balance Sheet—Business Side of Metallurgy —Scientific Management and Waste

THE non-technical or business side of the science of metallurgy and the relation of the steel treater to production and the factory balance sheet were discussed by George Satterthwaite, vice-president and general manager Henry Disston & Sons, Inc., Philadelphia, in an address before the Philadelphia chapter of the American Society for Steel Treating.

"In every industrial establishment," said Mr. Satterthwaite, "there are two kinds of workers: First, those who make the product either by their hands or by guiding and directing machines, known as direct labor or producers; second, those other workers who, although they do not actually perform work on the product to be sold, are necessary to the complete organization. They are known as indirect labor or non-producers."

"The cost in wages and materials of these indirect workers is a part of that terrible thing called 'overhead,' that ogre which, in these days of strenuous competition, is causing management so much thought and worry. It is these indirect producers, these 'overheaders,' who largely comprise the membership of the technical societies."

Technical Men Non-Producers

"Management recognizes fully the importance and necessity of these non-producers, because without them the producers could not produce. However, as they are non-producers, management is very careful to see that the cost burden is kept as low as possible and that their work is closely connected with production, for profits can come only from production."

"If the non-producing steel treater or metallurgist is to succeed, if he is to become an important and valuable part of the industrial organization, he must keep constantly in his mind that his management must recognize easily and positively that there is a direct path between his daily work and profits. That this profession has grown, that this society has reached its present prominence, must be strong proof that there is a direct path between these non-producers and dividends."

The producer, Mr. Satterthwaite said, must turn to the non-producer, the technical white-collar wearer, for assistance and guidance, for improved equipment without which he cannot hold or improve his production. When there is this closer harmony and cooperation between both classes, management quickly recognizes the contribution of the technical man to earnings.

Scientific Management

"Scientific management," Mr. Satterthwaite continued, "about which we hear so much these days, is simply a management that is recognizing and using the value of the scientist in its fight for profits and dividends, whether it be the science of forecasting, the science of personnel or the science of steel treating.

"I have just read a very interesting book by Stuart Chase, called The Tragedy of Waste, in which is portrayed an amazing story of the frightful waste of labor and material resources which has prevailed and is still prevailing. Industrial waste of labor and materials is a very live topic. Secretary Hoover is spreading the gospel of waste prevention as one of the important policies of the national administration. Henry Ford's famous achievement of production has been based largely on waste prevention. The technical and business magazines are devoting much space to it. Successful industrial management is studying waste as never before. As precious raw materials nearest at hand become exhausted and as the cost of securing them becomes greater and greater, it is axiomatic that care must be exercised in their economic utilization, if the finished article is to be produced at a cost sufficiently low to encourage its use."

"The waste or inefficient use of labor is equally serious and millions of dollars are now being spent in feverish research and in new equipment to enable labor to produce more articles per unit of time with less physical effort. A human being can lift a ton of steel in time; an electric crane can do the same—not better, but more quickly. The only difference between them is that man has a brain and the crane has not, and modern industry is rapidly placing on machinery the burden of weight lifting leaving man, who has the power to think, the opportunity to do these things which the brainless machine can never do."

Open-Hearth Men Discuss Problems

Elimination of Metalloids — Stoppers and Ingot Molds—Refractory Practice and Regenerators—Optical Temperature Readings

BY unanimous assent of those present the third conference of the open-hearth superintendents (in Chicago, April 12, 13 and 14) was the best which has been held. The committee work has been functioning better than in the initial stages; the discussion was free and vigorous. All the meetings were presided over by E. A. Whitworth, of the Gathmann Engineering Co., Baltimore, who was reelected chairman for the ensuing year.

Notable at all the sessions was the earnestness with which every topic was taken up and the apparent desire to get to the bottom of all experiences which would bear upon the problems in hand. Even at the dinner, Tuesday night, most of the conversation was in the nature of shop talk. There were no speeches—a feature which appeared to be appreciated. The principal points of the first day's session were given in our issue of April 15, page 1104.

These conferences are an extension of the work of the open-hearth committee of the American Institute of Mining and Metallurgical Engineers. Most of the papers read at this Chicago meeting had been read previously in February in New York at the annual meeting of the institute. (See THE IRON AGE of Feb. 25). The extension of the activities is particularly noteworthy in that it draws into the conferences a large number of open-hearth superintendents, metallurgists and other men directly concerned with the making of steel and responsible for its quality. Most of these operating men are not members of the institute. By the combination of their papers and discussions, however, with those of members, a far broader basis is formed for such conclusions as are drawn and a far wider extent of intimate knowledge becomes available to all concerned.

Elimination of Metalloids

TUESDAY'S sessions were devoted in the main to a paper on the elimination of metalloids in the basic open-hearth process; a discussion on stoppers; a continuation of the previous day's discussion on ingot mold materials; a report by the refractories committee on the effect of open-hearth practice on refractories; and a paper on the accuracy of optical pyrometers.

C. H. Herty, Jr., of the Bureau of Mines, Pittsburgh, formerly occupied at the Lackawanna Works of the Bethlehem Steel Corporation in a research leading to his doctor's degree from the Massachusetts Institute of Technology, Cambridge, read a paper on the elimination of metalloids in the basic open-hearth process. This paper, which was read in New York in February, was the joint effort of Mr. Herty and J. L. Keats of Wilmington, Del. A brief abstract of this paper appears at page 547 of our Feb. 25 issue. Some of the graphs thrown on the screen and explained by Mr. Herty at each of the two meetings have been crowded out of this issue but will be published next week.

Discussion

Referring to the slag conditions, Mr. Herty pointed out the considerable variation in the composition of ladle slag, depending upon the point where the sample is taken. The edge of the disk of slag, so to speak, is eroding rapidly from the brick lining of the ladle. Consequently there is much more silica in the rim of the slag than toward the center, and the proportion varies somewhat according to the distance from the center.

Desulphurizers came in for a little discussion. Mr. Herty stated that experiments in the use of soda ash had shown no effect in taking out sulphur, even when as much as 150 lb. of soda ash went into the ladle. T. L. Joseph, of the United States Bureau of Mines, Minneapolis, pointed out the intimate interrelationship between manganese and sulphur in the elimination of sulphur. Mr. Herty advocated the use of a high manganese pig iron as a means of lowering the sulphur content of the steel. He spoke of an instance where a manganese content of 1.60 per cent, in conjunction with a high sulphur content, had brought the sulphur down by the end of melting to within measurable distance of a finishing sulphur.

Use of High-Manganese Pig Iron

By general consent a high-manganese pig iron was advocated as providing a high residual manganese for the purpose of furthering the elimination of sulphur during the boil. James J. Bowden, chief metallurgist Laclede Steel Co., Alton, Ill., expressed the belief that the high-manganese pig iron would easily pay for itself, even if considerably higher in cost per ton, because it would thereby reduce the amount of ferromanganese necessary to add to the heat—a very expensive article. It was pointed out further that, with a high-manganese pig iron and a high residual manganese, the manganese loss from additional ferromanganese might be as low as 10 per cent, against a loss of 20 to 30 per cent with a lower residual manganese.

Fluorspar, as a maker of fluidity in the tapping slag was not favored by most of the speakers, except in very small doses. Much better results were attributed to the use of a pig iron high enough in manganese to keep the slag fluid without the use of fluorspar, which is hard on ladle linings. On being asked as to his opinion of the best analysis of tapping slag for best quality steel, Mr. Herty gave the following for a forging grade of steel:

47 per cent CaO_2	5 or 6 per cent MgO
16 per cent SiO_2	3½ or 4 per cent P_2O_5
12 per cent FeO	9 per cent MnO
3 per cent Fe_2O_3	

Soft Melt Blamed for Blisters

Blisters observed in the galvanizing department and elsewhere on both rimmed and killed steel were discussed. Kenneth C. McCutcheon, open-hearth superintendent Ashland, Ky., Works, American Rolling Mill Co., said that he had analyzed the results of about 1500 heats, and had come to the conclusion that 75 per cent of the blisters observed from these heats were due either to the heat having been melted too soft or having received an ore addition too near to the time of tapping the heat.

E. C. Ramsey, open-hearth superintendent Wisconsin Steel Co., South Chicago, expressed the view that, if the hot metal is put into the furnace before the carbon comes down as low as 0.20 per cent, it is possible to make as good steel as if the melt were much higher. He suggested the addition of 1000 lb. of spiegeleisen (10 to 15 per cent silicon) to the heat. He said that this would result in a loss of one hour in time and that it would cost more to make the heat that way. In forging steel, however, the resultant improvement of quality would make it pay.

Considerable discussion centered around the presence of FeO and MnO in the steel. This tied in with the discussion of the previous day as between FeO on the one hand and the higher oxides on the other. Mr. Herty expressed the conviction that it is impossible to avoid having some of these oxides in the steel. When the question came up as to how FeO could be distin-

guished in the analysis from Fe_2O_3 and Fe_3O_4, it was pointed out that FeO is stable at the high temperatures involved, whereas both the other oxides at those temperatures will combine with metallic Fe and form FeO. The solubility in steel of FeO was placed at about 1 per cent at a temperature of 2750 deg. Fahr.; while at 2900 deg., this solubility goes up to 4 per cent.

Stoppers and Molds

After the rereading by James J. Bowden of the discussion of L. F. Reinartz, given at the New York meeting, on the paper by Carl W. Peirce, the question of stoppers was taken up. In particular the opinions of all the operating men present were obtained as to whether it is best to rig the stopper so that it is raised when pressing down on the lever or when pushing up on the lever. The former practice was favored unanimously. In several cases a change had been made between the lifting to the push-down rig. It was held that this gives a better control over the flow of metal and that it is safer for the men. A particularly bad feature of the push-up arrangement was cited, when it is necessary to use a pricker to clear a cold nozzle. In this case, with the ladle raised several inches above its normal position, the handle is elevated so far that it becomes a difficult test of strength to push it up.

Mr. Kaufman, Valley Mold & Iron Corporation, Sharpsville, Pa., stated that he had found that a mold made from cupola metal gives a much closer grain, particularly at the surface, than one from direct iron. Consequently there is a smoother surface to the mold, resulting in a smoother surfaced ingot. On the other hand, this type of mold has a poor life. With high-grade steels it is not so necessary to worry about mold life as with the lower priced products. Hence, for high-grade steels the cupola mold was favored.

Slab molds almost invariably fail as a result of cracking clear through on one of the long sides. Molds, however, which are more nearly square in section, lack this tendency and consequently can be made with a higher manganese content, reaching as high as 1.6 per cent. These molds usually fail through fire cracks on the inside. These are likely to begin after about 80 heats on a mold 15 in. square. A cupola mold, on the other hand, might not have a life so long as that.

Refractory Session

"EFFECT of Open-Hearth Practice on Refractories" was the title of a paper read by Fritz W. Schroeder, United States Bureau of Mines, Pittsburgh. This paper was prepared as a result of the work of the refractories committee, G. A. Bole, of the Bureau of Mines, chairman. Much of the material covered in this report will be published by the Carnegie Institute of Technology, Pittsburgh, within a few weeks as bulletin No. 23 of the Mining and Metallurgical Series. The magnitude of the refractories industry was indicated by the statement that the cost of refractories in steel making varies from 30c. to $2.50 per ton of steel. With the higher figure, the cost of refractories for 45,000,000 tons of steel would reach $112,000,000. It was stated that the actual cost approaches this figure, as idleness of furnaces raises the unit cost.

Detailed discussion of the character and quantity of dust in the outgoing gas and of methods of collection were given. Such of the dust as exists in the form of oxide particles, when settling upon the brick in the checkers at the high temperature reached, tends to form a fluid slag. As the maximum temperature in the top of the checker chambers, as measured, ran from 2300 to 2600 deg., this condition was shown to exist.

Air Regenerators with Vertical Wells

In this connection a model in the office of George Danforth, general superintendent South Works, Illinois Steel Co., is of interest. In the air chamber Mr. Danforth's checker arrangement includes some vertical flues or wells 7 in. square, running down from the top of the brickwork through about one-third of the depth. These enlarged passages were deliberately made so that there would be less inclination for the top courses of bricks to become clogged with the deposition of dirt and resultant formation of slag. To further this immunity the tops of the bricks making the edges of these wells were tapered to an edge in Gothic formation.

It was pointed out in the paper that roof brick in an open-hearth furnace, after a considerable period of operation, has four distinct zones from the action of the heat, the gases and fumes. The top of the brick, retaining practically its initial conditions, has the highest fusing point of all. The bottom layer, which is much thinner and which is exposed to the gas, has a fusing point about 60 to 100 deg. less than that at the top. The two inner portions have lower fusing points than either of the exterior portions, being about 150 deg. less than the area exposed to the fire. These zones result in three planes of weakness for shearing, at their borders. It was pointed out that the oxidizing gases in the furnace burn up carborundum brick.

Considerable discussion came up over the presence of zinc and lead in the furnace charge. Zinc comes mainly from uncleaned galvanized sheet scrap, while the lead comes from locomotive wheels in which the counterweight has not been removed. One speaker stated that, after having melted a considerable quantity of locomotive wheels, he had found lead icicles below the pan of the furnace. The lead had penetrated clear through the bottom material, through all of the brick lining of the pan and through the pan itself. More than one ton of lead had dropped through and was recovered. Strangely enough, this does not seem to affect the bottom of the furnace, as the action appears to be in the nature of filtering through rather than actually making holes. In any event, no trouble was experienced later in any of these bottoms through the presence of holes made by this means.

Best Types of Regenerator Brick

Dense brick for checker chambers was favored in preference to porous brick, because of its much higher capacity for absorbing and retaining heat. A glaze on the brick seems to have no effect, either beneficially or prejudicially. Using such a dense brick, John W. Gething, Laclede Steel Co., stated that some hydraulic pressed brick had been in checker chambers at that plant for more than eight years.

Fineness of grinding the silica rock in preparation of brick was stated to have no effect on the life of an open-hearth roof as related to the reaction between the silica and the fumes of the furnace. However, with a coarse grind, spalling of the brick might be considerably more, because less uniform material can be made than with a fine grind. It is customary to grind the material for by-product ovens much finer than for open-hearth work. The burning losses are less with a fine grind for complicated brick shapes.

Questions by the chairman as to the sizes of brick favored for open-hearth regenerators brought out the fact that the fuel has something to do with it. Seven of the speakers use 4½ x 4½ brick, either 10 or 10½ in. long. One plant, while using this size for producer gas, uses brick 12 x 6 x 2½ in. for tar or coke oven gas. Natural gas is used with 9-in. straight brick in two cases, while 13 x 6 x 2½-in. brick are used on pulverized coal, and a similar size on oil. In other cases 13½ x 4½ x 4½ brick are used with oil, while a different shape, 13½ x 3 x 4½ in. are used for oil and tar.

Measurement of High Temperatures

FRITZ W. SCHROEDER, of the Bureau of Mines, Pittsburgh, read a paper on the accuracy of optical pyrometers, based on experiments made in the South Side Works of the Jones & Laughlin Steel Corporation, Pittsburgh. His preliminary remarks dealt with consideration of the emissivity factors as determined by a number of investigators, mainly in England. Greenwood, about three years ago, concluded that the effect of flame reflection would increase the apparent temperature when measured optically by from 27 to 35 deg. C. He concluded further, however, that other conditions attending the measurement would offset this apparent error. Consequently the conclusion was that

the reading by an optical pyrometer would be satisfactory and reasonably accurate, both for the slag and for the brick wall heated to incandescence. In particular it was felt that accuracy would be obtained if the instruments were sighted through a small opening, thus reducing in the area of observation the effect of flame reflection.

In the experiments reported upon by Mr. Schroeder he compared the optical readings with the extrapolated results obtained by using a series of thermocouples buried to differing known depths in the roof structure of an open-hearth furnace. The innermost couple was about 0.3 in. from the inside surface of the brick. Two other couples, located respectively 2 in. and 5 in. from that inside surface, completed the group. Plotting a curve with these distances as abscissae and the recorded temperatures as ordinates it was possible, by extending this curve, to obtain a figure for the inside surface of the wall itself, which was estimated at 100 to 120 deg. above that of the innermost couple.

Divergences in Observed Readings

Comparing readings obtained in this manner upon identical spots of the roof and back wall it was found that, with the flame off, that is, during reversal but before the new flame had a chance to form, the difference between the two sets of readings ran from 3 to 8 deg. Fahr. Much greater difference was observed in readings with the flame on. The lowest divergence was 9 deg., but several ran more than 100 deg., and one reached 244 deg. Always, with the flame on, the optical pyrometer was above the figure obtained in the other manner. In general this difference varied between 35 and 100 deg. Fahr.

In nearly all cases observation of the slag showed that it was cooler by from 10 to 100 deg. Fahr. than either the back wall or the roof. Sample readings given ranged from 2745 to 2852 deg. Fahr.

Conclusions

Among the conclusions reached were that, in the regular working of an open-hearth furnace, the temperature throughout the whole extent of the chamber is virtually uniform. This does not hold until a good slag has formed, during and after the melting of the charge. In the preliminary period there is a considerable difference between the bath temperature and that of the walls. This difference decreases rapidly, however, as the heat is worked, for there is a rapid heat interchange by radiation. At the same time, there is a most rapid cooling effect immediately the flame is shut off. Consequently readings for this condition were taken for the most part within three seconds, so that the cooling effect would not have opportunity to interfere with accuracy.

It was stated in a previous paper that the heat transfer from the combustion of the fuel to the slag, and thence into the bath, is by radiation to the extent of 85 to 90 per cent of the total transfer. Not more than 10 to 15 per cent of the heat is carried by convection and conduction.

Committees and Next Conference

AS announced on page 1104 of our April 5 issue, E. A. Whitworth, of the Gathmann Engineering Co., Baltimore, was reelected chairman of the conference. G. D. Tranter, open-hearth superintendent American Rolling Mill Co., Middletown, Ohio, was made chairman of the superintendents' committee. The three other committees were constituted as follows:

Practice and Yield Committee: James J. Bowden, chief metallurgist Laclede Steel Co., Alton, Ill., chairman; C. H. Herty, Jr., United States Bureau of Mines, Pittsburgh; H. B. Hubbard, superintendent open-hearth, Inland Steel Co., Chicago; R. L. Leventry, Republic Iron & Steel Co., Youngstown; J. L. Schuler, metallurgist Keystone Steel & Wire Co., Peoria, Ill.; A. W. Smith, works superintendent Youngstown Sheet & Tube Co., Youngstown, and G. D. Tranter.

Furnace Design Committee: Clem B. Collingwood, superintendent open-hearth and rolling mill, Stanley Works, New Britain, Conn., chairman; R. L. Cain, open-hearth superintendent Bourne-Fuller Co., Cleveland; Kent Harrison; J. Milton Hughes, Sharon Steel Hoop Co., Sharon, Pa.; William G. Kilto, Pittsburgh Steel Co., Pittsburgh; Frank A. King, open-hearth superintendent Weirton Steel Co., Weirton, W. Va.; John A. Mountain, Trumbull Steel Co., Warren, Ohio; Samuel B. Muir, open-hearth superintendent Donner Steel Corporation, Buffalo, and Kenneth C. McCutcheon, open-hearth superintendent American Rolling Mill Co., Ashland, Ky.

Refractories Committee: G. A. Bole, United States Bureau of Mines, chairman; A. R. Maxwell, Jr., Pittsburgh Steel Co., Pittsburgh; E. C. Ramsey, open-hearth superintendent Wisconsin Steel Co., South Chicago; Ernest Smith, open-hearth superintendent Andrews Steel Co., Newport, Ky.; George D. Walters, Atlantic Steel Co., Atlanta, Ga., and W. A. Young, Allegheny Steel Co., Brackenridge, Pa.

In connection with the refractories committee it was suggested that representatives of two or three of the leading brick makers be included. The chairman was requested to ask the Refractories Institute to nominate one or more men to cooperate with this committee.

Pittsburgh was tentatively suggested as the location of the October meeting. No decision was made and there was some dissent, particularly among those who wish to have the meeting in Philadelphia, so that they might visit the Sesquicentennial at the same time.

Visits to Plants

TWO leading items of interest in the visit of the open-hearth superintendents and others to the South Works of the Illinois Steel Co., South Chicago, were the Danforth method of laying up checkers and the sloping back wall on open-hearth furnaces. The former already has been explained in connection with the refractories session. The sloping back wall runs at an angle of approximately 20 deg. from the vertical, the brick in laying up being set with base horizontal and stepped back to form the contour. This surface, including the corners between brick, then is filled with a chrome ore mixture and the slope is such that dolomite may be sintered on it far more readily than with a vertical back wall. This makes it much easier to keep the furnace bottom in condition, particularly at the points of maximum attack from the slag. The buckstays on these furnaces are particularly heavy, having been made of steel slabs 5 x 12 in. in section.

In the Wisconsin Steel Works were seen the five most recent open-hearth furnaces built. These are of 100 tons each and the plant as a whole has been laid out with a view to labor-saving in every department. A large portion of the output consists of forging steel for use in the plants of the International Harvester Corporation, of which the Wisconsin Steel Co. is a subsidiary. Fuel oil is used, being heated to about 230 deg. Fahr. before being sprayed into the furnace.

After luncheon in the restaurant of the Inland Steel Co., Indiana Harbor, Ind., that plant was inspected. The company made a new record last month in ingot tonnage in both of the open-hearth shops. One shop has twelve 60-ton furnaces, while the other has fourteen furnaces, of which four are of 100 tons and the other ten of 85 tons capacity. These plants were all running at close to capacity. Aside from furnaces off for repairs there were only about three furnaces idle out of a total of more than fifty.

Much interest was aroused by the new 14-in. mill at the Inland plant, which consists of ten stands of rolls, six being continuous, while the others are arranged on the cross-country design, with Morgan skew-Y rolls for transfer back through the mill. This is driven by motor, all of the drive gears being inclosed in large hoods and all being carried from a single shaft 6 in. in diameter with the motor at one end. Another feature at this plant was the blooming mill and its electric drive. This mill was taking ingots 27 in. square and weighing 14,000 lb. each, requiring a maximum effort from the motor which reaches as high as 9400 hp.

Crane Runway Built By Welding

Electric Arc Employed in Fabrication of 14 Girders and the 16 "A" Frames Which Support Them—Joints Given Severe Tests

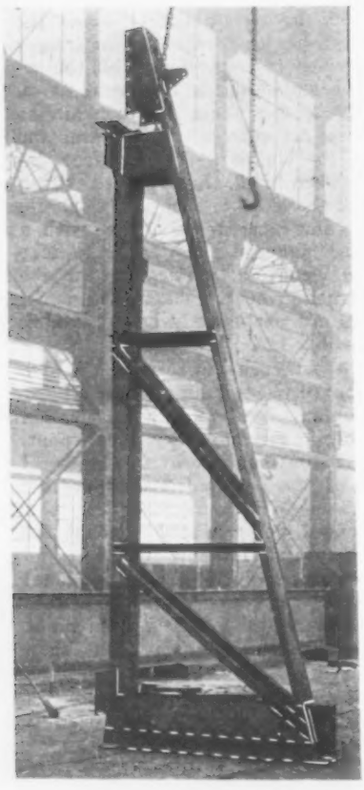
THE application of electric arc welding in the shops of the Morgan Engineering Co., Alliance, Ohio, in connection with the construction of a crane runway recently built for the Coplay Cement Mfg. Co., Coplay, Pa., is shown in the accompanying illustrations. The runway is 245 ft. long, and is built for a 10-ton bucket-carrying crane having a 100-ft. span. It required 65 tons of steel for the supporting members and crane girders.

The crane runway is made up of 16 supporting members and 14 girders—the latter being 35 ft. long. The fabrication required 1800 linear feet of continuous beading on the girders and in addition there were 2035 ft. of intermittent welds on the same members. On the supporting "A" frames there were 596 ft. of continuous beading and 403 ft. of intermittent beading. Twelve of the "A" frames supporting the girders are 21 ft. 11 in. in height and the other four are somewhat higher, to permit making a roof over a portion of the runway.

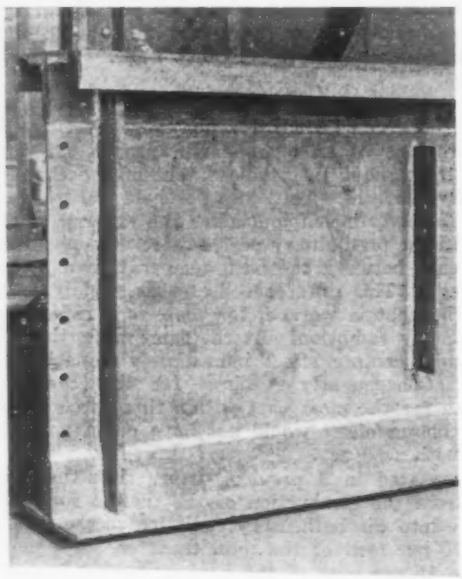
The Morgan company reports that the use of welding has resulted in a saving of 15 per cent in shop labor costs. The total time required for the welding was 1370 hr., 1050 hr. being required for welding the girders and 320 hr. for welding the "A" frames.

The crane girders were made up of a web plate 42 in. wide by ½ in. thick, with two 6 x 4 x ⅝ in. top flange angles covered by a 15-in. stiffener channel that is attached to the top flange angle by intermittent welds about 2½ in. long, spaced on about 8-in. centers. A bottom flange of two 6 x 6 x 9/16-in. angles was provided. Backs of the flange angles were set ⅜ in. from the edge of the web plates and each angle was then welded to the edge of the web plate. On this work a third bead was then laid, joining the two beadings connecting the angles to the edge of the web plate. Flange angles were also welded to the web plate along the toe of the leg against the web plate. All this welding was continuous for a distance of approximately 4 ft. from each end of the girder. Over the remainder of the distance to the end of the girder, intermittent welds were used and were spaced 2½ in., alternately between the backs and toes of the angles. On the average, these welds were about 2½ in. long.

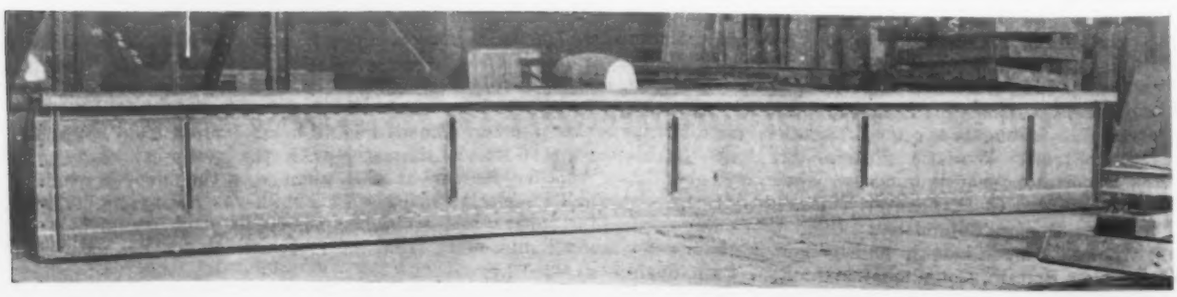
In fabricating the "A" frames, welds of various lengths were made. Cross pieces, plates and angles

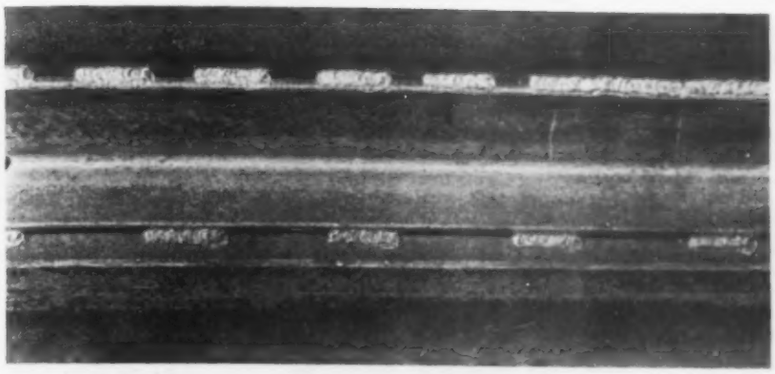


A Welded "A" Frame, Ready for Shipment, Is Shown at the Left. There were 16 of these frames, which serve as supporting members for the girders. The welding of them required 596 ft. of continuous beading and 403 ft. of intermittent beading



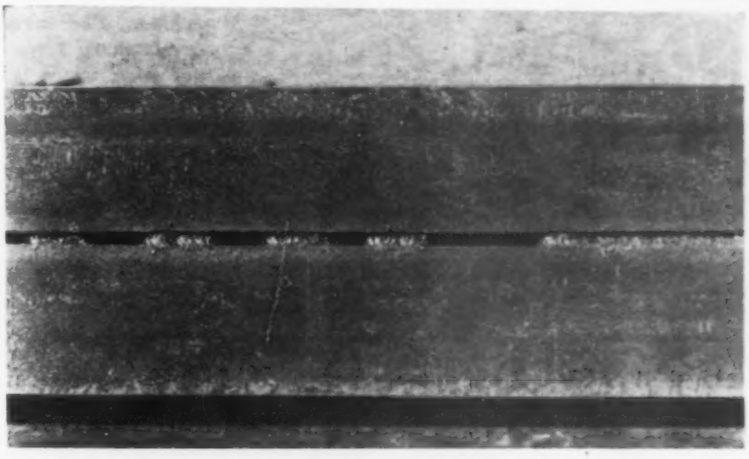
One of the Welded Girders, Ready for Shipment, Is Shown Below. It weighed approximately 6800 lb. The close-up view above shows the manner in which the flat bars were used as stiffeners. These bars were edge-welded to the web and top and bottom flange angles. The manner of welding the flat bar to the web is shown, also. This bar takes a bracket for a footwalk





The Manner in Which Welds Were Made Between the Angle and Web Plate, and of Attaching the 15-In. Stiffener Channel to the Flange Angle by Intermittent Welds, Is Shown Above

The View Below Illustrates the Manner of Welding Between the Back of the Angles and Edge of Web Plate



The Welded Plate Was Bent as Shown by 60 Blows with a Sledge Hammer, the Weld Being Unaffected. The plate is 8 x 9 x ⅜ in. and is welded to the web of an I-beam

were joined either with continuous or intermittent beading according to the burden to be carried by the portion of frame being welded. The 12 shorter frames weighed approximately 2500 lb. each and the larger ones 3600 lb. each. In addition to the saving in shop labor, it is stated that the welding of the "A" frames permitted of some additional saving in reducing the amount of material required and also the amount of engineering and drafting room work.

The welded joints of the crane runway and other welded joints were given severe tests by the Morgan company. It is stated that in each case the welds showed no signs of giving away. A plate section 13 x 10 x ⅜ in. was edge-welded vertically to the flange of an "I" beam. The plate was then given 60 blows with a 12-lb. sledge hammer and bent into a shape similar to that shown above; the weld was not affected. Then a steel ram weighing 587 lb. was hung from an overhead crane and four men behind the ram directed 46 blows against the welded plate as close to the weld as possible, but this did not cause a cracking of the weld. Another test of the type of welding used on the runway was the welding of a plate section 8 x 9 x ⅜ in. to the web of an "I" beam. The plate was then bent by hitting it about 60 blows with a 12-lb. sledge hammer into the position shown in one of the illustrations herewith, but there was no sign of a break in the weld. The welding of the crane runway as well as the welding of the test pieces was done with Lincoln Electric Co., Cleveland, equipment.

More Locomotives Retired Than Installed

Equipment installed during 1925, according to the Bureau of Railway Economics, Washington, included 1733 locomotives, 125,760 freight train cars, and 2557 passenger train cars, each item the smallest number since 1922. As 3005 locomotives were retired during the year, the total number in service declined by nearly 1300. The number on Jan. 1, 1926, partly estimated, is given as 64,150. Aggregate tractive power remains substantially the same as a year ago. The average power, however, went up from 39,889 lb. to 40,625 lb. This advance in the past four years has been almost precisely 10 per cent, the figure for Jan. 1, 1922, having been 36,935 lb.

Retirements of freight train cars have been somewnat less than the units installed. The total number in service, Jan. 1 last, is given as 2,358,000, with an aggregate capacity of 105,403,000 tons, or an average of 44.7 tons. This average has shown a steady increase, having been 42.5 tons four years previously. Passenger train cars retired in 1925 outnumbered new units installed by more than 500. During the past four years the retirements have been 9057 cars, against 9298 cars installed.

Large Gains in Operating Efficiency

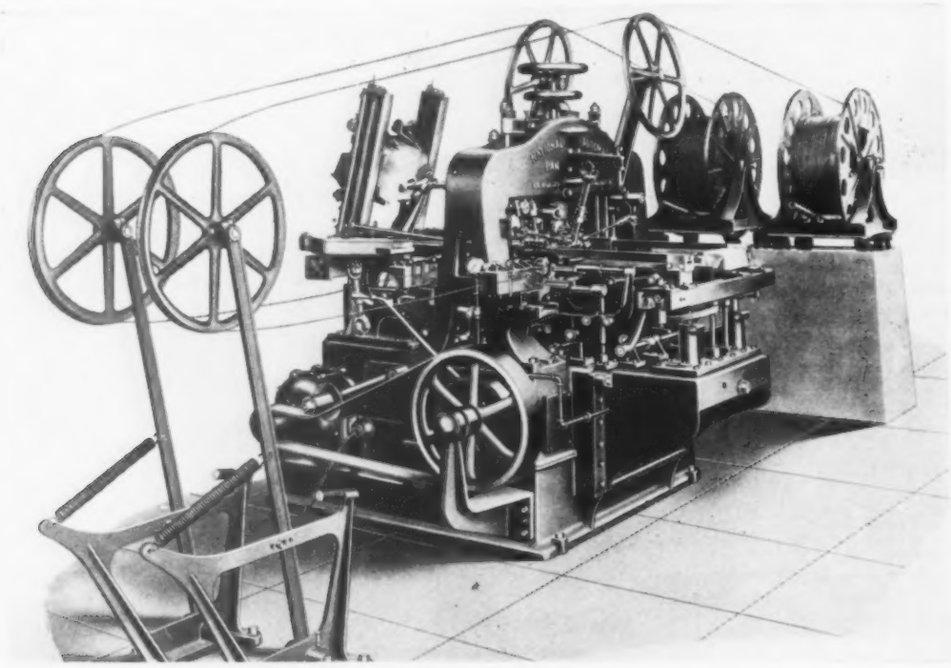
Performance ratios show an improvement in most items. Miles per freight car per day aggregated 28.3, the largest figure on record. Tons per loaded car were 27, compared with 29.3 in 1920, the high record. Net ton-miles per car per day were 493, compared with the record of 510 in 1923. Net tons per train made a new high record, 744. Gross tons per train, excluding locomotive and tender, made a new record at 1670.

Average freight cars per train formed a new record at 43.8, compared with 41.7, the previous record, in 1924. Freight train speed made a new record at 11.8 miles per hour. Fuel consumption per 1000 gross ton-miles dropped to the lowest figure ever recorded, at 159 lb.

HIGH OUTPUT IN MAKING PANS

Wire Reinforced Metal Containers Produced at Rate of 35 Per Minute

High production in the manufacture of square and rectangular wire reinforced pans is claimed for the machine here illustrated, which was demonstrated recently at the plant of the National Automatic Pan Corporation, Los Angeles.



Pan Blanks Are Stacked in the Magazine. Nine operations are then performed automatically, the finished wire-reinforced pans being ejected from the rear of the machine. The wire reels carry 1 ton of wire, which is sufficient for a half day's run. Production is at the rate of 35 pans per min.

The machine is adapted for the manufacture of bread pans, ash pans, switch boxes, metal shipping and other containers, the production of wire reinforced bread pans, for which the machine shown is set up, being at the rate of 35 per min. Pans ranging in size from 4 in. x 4 in. to 12 in. x 12 in., and from 1¼ in. to 4 in. deep are within the capacity of the present model. A larger machine for pans ranging from 12 in. x 12 in. to 3 ft. x 3 ft. is being developed. The machine is the invention of W. J. Roepke, general manager of the corporation.

Nine operations are performed automatically. These operations comprise the feeding of the blank; folding of the sides and ends; folding of the four corners; feeding of the wire; straightening of the wire; cutting of wire to proper length; forming of wire at right angles; placing of wire around the pan; rolling the rim of the pan; and ejecting the finished work. These operations are actuated by cams on a cam shaft located in the base of the machine. The cams operate in oil and the cam shaft is of chrome-vanadium steel and is mounted on ball bearings.

Pan blanks are used as they come from blanking presses of the usual type, and are put up in stacks for placing in the magazine of the machine. The blanks are taken from the magazine by a vacuum suction arm and placed upon the blank locating mechanism. They are then fed under the folding mechanism, lengths of reinforcing wire being fed in at the same time. The next to operate is the form, which comes up, raises the blank against the bottom of the folding mechanism and clamps it there. The folding mechanism then comes into operation and the blank is folded, after which the finished pan is ejected from the machine. Adjustments for making pans of various sizes may be made conveniently.

A feature is the blank-feed mechanism, which is arranged to assure positive action in picking off one blank at a time from the stack in the magazine. The arrangement is such that the blank does not buckle. The folder is arranged so that it adjusts itself automatically for material of varying gage. The wire rolls may be mounted as shown, or on another floor, or elsewhere to suit conditions. They are designed to carry 1 ton of wire, which is sufficient for a half-day's operation of the machine, or for approximately 8000 pans.

All mechanism is accessible for adjustment and all parts are made on an interchangeable basis. Lubrication of moving parts is by means of forced feed. Before returning to the reservoir the oil is filtered through a charcoal filter, which removes scale and other injurious material.

A 5-hp. motor, mounted on the side as shown, serves to drive the machine. The floor space occupied by the machine, not including the wire reel, is approximately 5 ft. square.

Steer-Type Trailer for Use with Industrial Tractors

A fifth-wheel steer-type trailer designed for use in connection with either gasoline or electric industrial tractors is being added to the line of the Crescent Truck Co., Lebanon, Pa.

The frame of the trailer, which is shown herewith, is made up of Tee-iron, suitably gusseted and braced.

Fifth-Wheel Trailer Used With Tractors

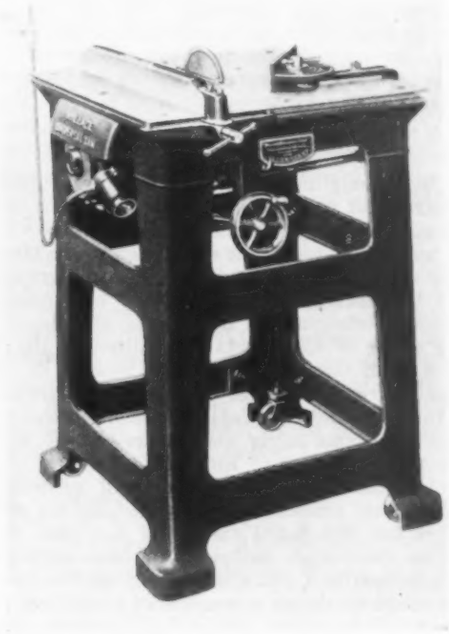
The wheels, of semi-steel, are 12 in. in diameter and are mounted in roller bearings. Bassick type Ruboid wheels or press-on type automotive tires can be furnished if desired. Alemite fittings provide for lubrication. The platform of the trailer measures 3 ft. by 6 ft., and is 15½ in. in height. A set of pipe racks is provided as standard equipment.

Portable Universal Saw for Floor or Bench Use

J. D. Wallace & Co., 134 South California Avenue, Chicago, are adding to their line the universal circular saw here illustrated, which is designed for use either as a portable bench machine or a self-contained floor type saw. The motor and other working parts are mounted as a unit in the upper part of the machine and thus the upper part may be lifted from the regular base and used as self-contained bench equipment. Casters are provided on the floor stand to facilitate movement.

The machine, designated as the No. 8, is capable of cutting stock up to 2¼ in. thick, and by utilizing the various adjustments it is also capable of cutting compound miters, grooves ⅞ in. wide and 1 in. deep, moldings, groove and tongue, etc., by means of a special dado head. It is driven by a 1-hp. motor, which is geared directly to the saw spindle. The motor is equipped with ball bearings and the saw spindle bearings and gears are lubricated by the splash system. The motor takes current from a light or power circuit and is started and stopped by means of a toggle switch which is protected from being thrown accidentally.

The table is of steel, of one piece and measures 25 in. x 25 in. It is fitted with a removable throat piece so that special saws, dado and cope heads requiring a wider throat opening may be used. In cutting angles the saw is tilted instead of the table, the table always remaining in the horizontal position. Any angle up to 45 deg. may be cut while either ripping or cross



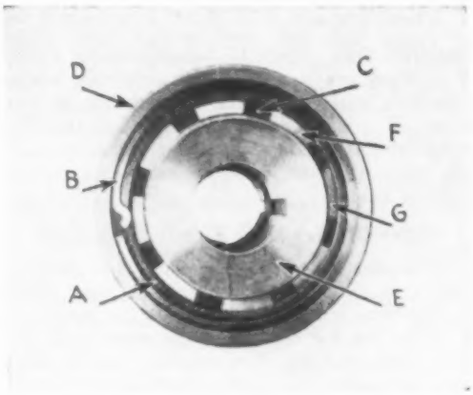
The Machine Is Arranged So That the Top Part May Be Lifted From the Stand for Bench Use

cutting. The saw is tilted by means of a hand wheel, the exact angle being indicated on a dial at the front of the machine. A second hand wheel is provided for raising and lowering the saw blade for depth of cut.

The ripping fence resembles a tee-square and is clamped rigidly in any position to a rail at the front of the machine under the edge of the table. The fence is ground on both faces so that it may be used on either side of the saw blade, and can be removed when not in use. Two cross cut fences are provided so that right- and left-hand mitering up to 50 deg. can be done, the angle being indicated on a plate on each fence. Provision is made for taking up play, thus assuring accuracy. These fences slide on rails under the edge of the table. The saw blade is guarded both above and below the table.

New Flexible Coupling for Light and Heavy Loads

A new flexible coupling for application to any direct-connected load from a fractional horsepower motor up to large rolling mill drives, has been brought out by the Clark Controller Co., Cleveland. A feature claimed for the device is that it permits liberal allowance for angular and parallel misalinement, and there is no dis-



There Are Comparatively Few Parts and the Coupling May Be Disassembled Conveniently

tortion of any part of the coupling to compensate for the misalinement.

The coupling is made up of comparatively few parts and may be disassembled conveniently in case a motor armature has to be removed. For a given maximum shaft diameter on which the coupling is to be mounted, the outside diameter of the coupling is comparatively small, thus reducing unnecessary flywheel effect. No bolts or screws are used in the device and neither grease nor oil is required. Another feature stressed is noiseless operation, and when assembled and ready to operate, the surface of the coupling is as smooth as an ordinary pulley.

An end view of the assembled coupling is shown herewith. The keeper ring is shown at *A* and spring retaining ring *B* in place at *B*. Eight pieces of standard hydraulic packing, of which *C* is an end view, are inserted between the outwardly projecting teeth on the hub castings and the inwardly projecting teeth on the sleeve casting *D*.

Operation is as follows: The driving hub *E* rotates, causing its four projecting teeth *F* to press against four of the pieces of packing. This pressure is transmitted to the four inwardly projecting teeth *G* on the sleeve. These teeth extend across to the other hub and transmit the pressure to the teeth on the driven hub through the other four pieces of packing. The packing is in compression. All shear strain is taken by a heavy steel section.

Japan as Consumer of Industrial Machinery

WASHINGTON, April 16.—Exports of industrial machinery to Japan have decreased each year since the abnormally high mark in 1919, with a total value of $25,022,000, according to the Industrial Machinery Division, Department of Commerce. Exports in 1925 were valued at $6,254,000, a decline of approximately 40 per cent under 1924. The division statement says, however, that it is important to note that in spite of these post-war decreases the 1925 exports to Japan were nevertheless more than treble those for the pre-war years of 1910 and 1913.

"It is interesting to note that while Japan now ranks sixth in importance among the world markets for American industrial machinery," the statement continues, "it ranked third in 1924 and 1923, second in 1922, but only tenth in 1910 and eighth in 1913, so that while the present showing is apparently unfavorable, it is still considerably ahead of the pre-war period."

Canadian Steel Mills Want Tariff

Manufacturers of Steel in the Dominion, Facing Strong Competition of American Mills, Are Agitating Question of Protection for Products

TORONTO, ONT., April 15.—Agitation for a protective tariff on steel products to meet the strong competition of American mills is holding the interest of Canadian business. For some years the policy of the Dominion Government has been toward free trade, or at least a greatly reduced tariff wall, between this country and the United States.

Steel Makers Make Plea for Protection

In his statement to the shareholders of the Dominion Foundries & Steel, Ltd., Hamilton, Ont., President C. W. Sherman made a strong plea for more adequate tariff protection for certain of the company's products, and said that, once the Government provides such protection, the company would immediately employ 700 additional hands and that this number would be shortly increased to 1000. The difficulty facing the company is that it has to bear a heavy tariff on many of its raw materials and enjoys only a 2 per cent tariff on its products. Some of its departments, the products of which are adequately protected, are busy, while those departments whose products are not protected are idle.

In 1919 the company, Mr. Sherman stresses, was officially encouraged to make provision for the manufacture of universal steel plate and billets for forging. Such material was not at that time made in Canada. The company proceeded, on the promise of the then Federal Government that the industry would be adequately protected, constructed its large plate mill at an expenditure of $2,000,000. The mill was completed in 1921, but its operation was postponed until after the Dominion elections in that year, as the company did not wish to engage a staff until it saw the promise of the Government fulfilled. The Union Government was defeated in that election. When the King Government brought down its first tariff, its fiscal policies were different from those of the Union Government, and the Dominion Foundries & Steel, Ltd., was offered no further encouragement to proceed in the manufacture of steel plate and billets. The result was that the large and costly plate mill has lain idle all these years.

In discussing the iron and steel needs of Canada, W. C. Franz, president Algoma Steel Corporation, Sault Ste. Marie, Ont., recently pointed out that there are two things necessary for the development of a prosperous iron and steel industry in Canada—extension to provide for the manufacture of products not at present made in the country, and reasonable protection from foreign competition. The latter would lend encouragement for the former.

Speaking at the annual meeting of the shareholders of the Steel Co. of Canada, Ltd., held in Hamilton, Ont., April 8, Ross H. McMaster, president of the company, pointed out that severe competition and lack of tariff protection are today held responsible for lack of progress in the Canadian steel industry. Prices, he declared, had declined during 1925, as compared with the previous year. Some lines of products had suffered unduly by return of the extremely keen competition for business which has prevailed. In discussing the steel situation in general he said:

"The progress—or perhaps I should say lack of progress—of the steel industry in Canada during recent years is not generally appreciated. Competitive conditions have been accentuated by the narrowing of the market in consequence of various tariff changes from time to time. These embrace preferential trade agreements, drawback items and exemptions from duty which apply to steel for particular purposes and also free list items which have been added and which, supported by lower wages and depreciated currency in other countries, have facilitated entry of foreign sellers into the market."

Canadian Steel Production Shows Slow Increase

Mr. McMaster said that, despite the general increase in steel consumption per capita in most other markets, it was less in Canada than during 1912 and 1913. In 15 years Canadian steel production had shown an increase of less than 1½ per cent, while in the United States the increase had been 75 per cent. The reduced consumption of steel rails, he said, emphasizes the need to encourage the production of other forms of iron and steel. Speaking of taxation, he said that the burden rests most heavily upon business. "For every dollar yielded from productive effort expended in all industry," he continued, "we have to set aside about 25 cents to satisfy the tax collector. It is a poor bargain for a country to admit commodities similar to those produced at home without payment of any contribution to the Federal or other exchequer." Terming this a "contrary policy," Mr. McMaster mentioned that 55 items in the tariff admit iron and steel of various descriptions duty free, or provide a drawback of substantially the entire duty when intended for particular purposes. An examination of the tariff during the last four years gave the average rate on iron and steel as less than 10 per cent.

Workmen Also Urge Protection

It is not only industrial leaders and executive heads who have fault to find with the Canadian Government's tariff policy. Steel workers themselves have no illusions as to the cause of the depression in the steel trade that has kept hundreds of them idle for a greater part of the last three or four years, and has forced other hundreds to emigrate to the United States. At a recent meeting of the Works Committee of the British Empire Steel Corporation, held in Sydney, N. S.—the 25 elected representatives of employees from every department of the steel plant—a resolution was adopted placing the blame fairly and squarely, first, upon the depreciated currencies of European countries; and, second, upon the lack of adequate tariff protection for Canadian steel products. They state they are prepared to go before any board and prove not only that the Canadian steel trade is losing its best customers to foreign competition, but also that Canadians are being forced out of employment because of insufficient protection against American steel. As a remedy they demand that (1) the Government place an embargo upon steel from European countries with depreciated currencies, and (2) that adequate tariff protection be afforded against American competition. They declare the present tariff may have been adequate when imposed years ago, but is useless now owing to increased costs of production. The resolution follows:

United States Gets Large Share of Business

During the ten months of the fiscal year to the end of January last Canadian imports of iron and steel and their products amounted to $144,029,695, of which total $124,392,024 was imported from the United States, and the remainder from France, Belgium, Germany and other countries which have an advantage over Canadian producers due to the depreciated currency and the inadequate tariff.

While it is true that Canadian steel mills have been rather fortunate in securing new business during the past three or four months and at the present time those located at Sydney, N. S., Hamilton, Ont., and Sault Ste

Marie, Ont., are running about 75 per cent capacity, Canadian steel interests are doubtful as to whether this improvement in conditions will be lasting. Foundries have not shared in the improvement, with the result that the smaller concerns throughout eastern Canada are operating only from about 35 to 50 per cent capacity.

Anti-Dumping Legislation Adopted

A recent amendment to the Customs Act is a step toward providing relief to the Canadian manufacturer. Its tangible effect will not be at all revolutionary, but it is interpreted by business men as an indication of a more friendly Government attitude. The amendment helps to preclude the dumping in the Canadian market of goods produced in countries whose depreciated currency has given them an advantage over the Canadian manufacturer. These countries have not been slow in taking advantage of the situation. Under the new ruling, imports from these countries will be valued for customs duty assessment at the price of similar goods produced and sold for home consumption in the United Kingdom, rather than in the country of origin, as formerly. The enactment applies to countries whose currency is depreciated more than 50 per cent.

When the Currency Act was amended in 1922 and the present depreciated currency provision inserted, the Customs Department issued a memorandum, stating that the section would apply to products of Germany, Austria, Jugoslavia and Russia. The spirit of the measure seems designed to cover all countries with depreciated currencies, but the ruling was not made to apply to France, Belgium and Italy and some other countries until the recent amendment was included. Certain classes of steel products are affected under the new ruling, notably steel sheets, nail-making steel and small rods. These goods are produced in France and Belgium at a price which makes it difficult for the Canadian manufacturer to compete. During the last fiscal year a total of more than $250,000 worth of iron bars and rods was imported from Belgium and it is alleged that other products came in in fairly large quantities by way of other countries. France sent to Canada pig iron worth $133,000, and cast iron pipe worth $166,000 during the same period.

Tariff Board Now Functioning

Canadian business men look for some improvement in the tariff situation as the result of the appointment of a Tariff Board by the Federal Government. Premier King announced in the House of Commons on Wednesday, April 7, the composition of the advisory board of the tariff as follows: Rt. Hon. G. P. Graham, former Minister of Railways and Canals in the King Government, chairman, and Alfred Lambert of Montreal, and D. G. Mackenzie of Winnipeg. The order-in-council appointing the board prescribes that:

(1) The duty of the board shall be to inquire into and hear representations on all matters pertaining to the tariff and other forms of taxation, as may be directed by the Minister of Finance, and to advise the Minister in regard thereto.

(2) The said board shall be under the jurisdiction of the Minister of Finance, who may make such regulations and give such instructions as he deems expedient or necessary to carry out the purpose and intentions thereof.

(3) The board shall hold meetings whenever it appears to the board to be necessary or desirable and also whenever required by the Minister of Finance to hold meetings.

(4) The board shall avail itself of information and advice from such officers of the Department of Agriculture, Customs and Excise, External Affairs, Finance, Labor, Trade and Commerce, or other departments of the public service, as may be able to be of assistance to the board.

(5) The Minister of Finance, on the recommendation of the chairman of the board, may engage competent persons possessing special knowledge to assist the board and may similarly engage such clerical assistants as may be necessary and such persons and clerical assistants may be paid for their services at a rate to be determined by the Minister of Finance.

More Stokers Sold

Sales of mechanical stokers in March represented the largest number, with two exceptions, in more than two years, there having been 132 stokers of 52,312 hp. total. The horsepower rating, while considerably greater than that for the four previous months, is below that of October, and much below the 71,099 of March, 1925.

Sharp Cut in Canadian Duty on Automobiles

TORONTO, ONT., April 20.—In bringing down his budget on April 15, Hon. James Robb, Canadian Minister of Finance, announced a rather severe cut in the duties on automobiles, but otherwise its effect on the iron and steel industry was almost negligible. It is proposed to reduce the duty on automobiles valued at not more than $1,200 (United States prices) to 20 per cent under the general tariff, 17½ per cent under the intermediate tariff, and to 12½ per cent under the British preferential tariff. On automobiles valued at more than $1,200 (United States prices), the general tariff is reduced to 27½ per cent, the intermediate tariff to 25 per cent, and the British preferential tariff to 15 per cent. To encourage Canadian industry, a drawback of 25 per cent will be paid on the materials used in the manufacture of the above mentioned motor cars, provided that at least 50 per cent of the work on the finished vehicle, in terms of cost, is done in Canada.

The lowering of the tariff on automobiles has already caused considerable stir in this country on the part of Canadian motor car manufacturers. In fact, the day following the announcement of the budget, the General Motors Corporation of Canada, Oshawa, Ont., closed its plant as a protest, throwing some 3000 employees out of work. Officers of the company announced that the plant would be shut down indefinitely. While the tariff reduction is frowned on by manufacturers, it appears to be looked on with favor by the masses of the people who are not engaged in the industry.

Annual Convention of Machinery Distributers' Association

Twenty topics are listed for exhaustive discussion at the twenty-first annual convention of the National Supply and Machinery Distributers' Association, to be held at the Ambassador Hotel, Atlantic City, April 26, 27 and 28. Some of these are prepared papers, while others are general discussion, with the chairman calling upon manufacturers and distributers for their experience and viewpoints. The keynote is the relation between manufacturer and distributer, the cooperation which they can afford each other, and such questions as margin, price cutting, etc., as affecting their relations.

At the executive session, Wednesday morning, distribution of small tools, bolts, nuts and rivets, belting and transmission, twist drills, chucks and other types of equipment will have the floor, followed by a consideration of the present agitation regarding the metric system of weights and measurements. The discussion of this latter topic will be under the question as to whether the present agitation should be regarded seriously.

Sloss Company Distributes Refunds on Freight Charges to St. Louis Foundries

ST. LOUIS, April 20.—Russell Hunt, secretary-treasurer Sloss-Sheffield Steel & Iron Co., Birmingham, came to St. Louis last week and distributed checks to 35 foundries in this industrial district. The checks represented refunds of freight charges on pig iron shipped between 1910 and 1915. In 1910 the Birmingham company obtained a judgment against railroads in a fight for a reduction in freight rates amounting to 35c. a ton. The railroads carried the case to the United States Supreme Court, which recently decided adversely to the lines, forcing them to refund the excess freight charges on shipments during the five-year period between the time of first judgment and final decision.

Distribution was made at a luncheon given to the foundry men by Charles A. FitzGerald, St. Louis representative for the Birmingham company. The guests did not know the purpose of the meeting until after the money was distributed.

SHEET PRODUCTION AND SALES

Shipments and Output Neck and Neck—Heavy Sales in March

An interesting feature of the monthly reports of the National Association of Sheet and Tin Plate Manufacturers this year has been the nice balance between production and shipments of sheets. In January, production was approximately 5000 tons less than the shipments, while in February, there was an excess of production over shipments of 9527 tons and the figures for March, which just have been released show that shipments were about 1500 tons more than the production.

March figures make possible a compilation of the results for the first quarter of the year. Total sales for the first three months of the year were 738,657 tons; production 947,328 tons and shipments 944,134 tons. Sales for the period were 1929 tons less than in the first quarter of last year, but the quarter's production was 56,308 tons greater than a year ago and the shipments showed a gain as compared with last year of 125,972 tons.

The feature of the March report is a very substantial gain in sales as compared with the month before. It amounted to 123,132 tons, or more than 68 per cent of the February total. Unfilled orders, after decreasing in January and February, increased almost 1100 tons last month. If the capacity not included in the report produced at the same rate as that reported, the production of all mills for March would be 399,224 tons, or a little more than 88 per cent of the theoretical capacity. The figures in detail follow:

	1926		1925	
	March	February	January	March
Total No. mills	712	712	711	701
Capacity per month	452,315	396,550	420,800	422,000
Percentage reporting	74.9	75.0	74.8	73.3
Sales	304,233	181,101	253,323	263,666
Production	319,132	299,553	328,643	290,308
Shipments	320,623	290,026	333,485	279,437
Unfilled orders	534,641	523,882	609,203	550,422
Unshipped stock	111,948	113,797	110,671	94,074
Unsold stocks	61,433	51,648	55,295	57,714
Percentages to Capacity				
Sales	89.8	61.0	80.4	85.2
Production	94.2	100.9	104.4	90.7
Shipments	94.7	97.6	105.9	90.3
Unfilled orders	157.9	176.4	193.5	177.8
Unshipped stock	33.1	38.3	35.1	30.4
Unsold stocks	18.1	17.4	17.6	18.6

Mobilization of Industry

Study of Best Use of What We Have and How Much Capital Must Be Paid

WASHINGTON, April 20.—Hearings were concluded last Tuesday by the Senate Committee on Military Affairs on the Capper bill for the mobilization of industry during war. The measure is sponsored by the American Legion. Among witnesses were some who had an active part in price fixing and related activities during the World War. Prominent were Bernard M. Baruch, chairman of the War Industries Board, and Robert S. Brookings, chairman of the Price-Fixing Committee of the Board.

Particular interest was manifested in the testimony of Mr. Baruch. He made an exact distinction between the control of capital during war times and the conscription of wealth and was emphatic in stating opposition to conscription as it is generally understood, either of capital or labor. At the same time he said he does favor controlling and directing its uses.

To Utilize Resources to Best Effect

Mr. Baruch took exception to the manner and method of doing the things which it is desired to do. He pointed out that the object of the bill is to mobilize the resources of the country. In case of another war, he said, advantage will be taken of experience of the last war to make the best use of the resources of the country. The second purpose is to provide equal service for every one and special profits for no one; the third purpose is to control the great economic aftermath of the war.

What Return Should Capital Have?

Senator Brookhart, of Iowa, subsequently unseated, questioned Mr. Baruch at some length regarding the return capital should be allowed during war, suggesting that 4 per cent should be a maximum. This figure was based on the claim that that is all that the American people as a whole can produce.

Mr. Baruch said that 4 per cent might be a fair index of the return and declared that, assuming that the figure is correct, he saw no objection. However, he would not favor putting such a provision specifically into the bill. Instead, he favored the President being given power to fix prices on declaration of war, with power in the price-fixing committee to adjust them to any fair basis.

The Austin Co., Cleveland, engineer and builder, has been awarded a contract to build a motion picture studio by First National Productions, New York. It will amount to a new film city, on a 64-acre tract at Burbank, a suburb of Los Angeles.

Industrial Relations

Wage Problems and Foreman Training to Be Discussed Before National Chamber

WASHINGTON, April 19.—Foreman training and wages will be discussed at an industrial group meeting, to be held as a part of the fourteenth annual meeting of the Chamber of Commerce of the United States at Washington, May 11 to 13. A. J. Brosseau, president Mack Trucks, Inc., New York, will preside. Discussion will be opened by two outstanding figures in the manufacturing field, followed by general discussion of the two subjects.

With regard to foremanship training, the Department of Manufacture says that "restricted immigration, elimination of waste and lost motion, the need for restoring, as far as possible, the old-time relations between employer and employee which obtained in the days of the small shop, are some of the reasons that industry is giving special attention to the selection and training of men occupying the important supervisory positions at the lower end of the industrial ladder.

"Recently, the National Association of Foremer was organized at Dayton, Ohio, and several States have groups of training classes. Altogether the movement is encouraging, affording, as it does, an opportunity for young men engaged in industry to move up through merit rather than in the old-time way by selection, influenced more or less by reasons other than merit.

Changed Ideas on Wage Cutting

"With the growth and study of industrial or human relations, the attitude of the employer toward the wage scale and payroll is now different from his attitude in early days. It once was common practice, in times of dull trade or close competition, to turn first to the payroll as a means of reducing costs or prices. This, however, is not true to any extent today. Since we have become an industrial nation and a large portion of our consumers are wage earners or salaried folk, the employer turns to the payroll as a last necessary resort only when reducing prices and costs is imperative. The necessity for informing the wage-earner how the profit-dollar is developed will be dealt with in this discussion."

Domestic sales of oak leather belting in March, as reported by the Leather Belting Exchange, representing about 60 per cent of the total product, amounted to 397,207 lb., valued at $678,828, or $1.71 per lb. This is more than the February sales, amounting to 376,460 lb., valued at $639,607, or $1.70 per lb., but is well below the figures for March, 1925, which were 429,404 lb., valued at $728,699, or $1.70 per lb.

MESABI MINING IS SAFER NOW

Marked Reduction in Iron Mine Fatalities in Five Years

DULUTH, MINN., April 19.—Approximately 40 million tons of material was moved in iron mining operations in St. Louis County, Minnesota, last year. To do this work 10,180 men were employed. This was 13 tons of material moved per day per man, if all the men enumerated were working the full year, which is unlikely. The probability is that about 18 tons per man was the average daily output.

In the year there were fatal accidents numbering 1.77 per 1000 men employed, and 2.3 serious non-fatal accidents per 1000 men. The result of the intensive and long continued safety campaign started years ago by the mining companies operating in the county is thus shown. In the corresponding period ten years ago the fatalities were 7.48 per 1000 men, and at that time there were 12,838 men employed, with a production of almost exactly 5,000,000 tons less of ore than in 1925. There has been an almost consistent reduction of fatalities in the mining field, the past five years showing as follows:

Year	Deaths per 1000 Men	Year	Deaths per 1000 Men
1920	2.55	1923	2.27
1921	2.15	1924	1.82
1922	2.41	1925	1.77

The nature of the fatal accidents of last year, together with the nationalities of those killed, are as follows:

Nature of Accident			
Electric locomotive	1	Train	3
Ore chute	3	Falling lagging and ore	3
Blast	2	Timber truck	1
Cave on stockpile	1	Skip	1
Underground caves	3		

Nationality of Men Killed			
American	6	Serb	3
Norwegian	2	Austrian	2
Swede	1	Italian	3
Finn	1		

During the past year the U. S. Bureau of Mines has trained 178 St. Louis County iron ore miners in first aid and 140 in mine rescue work, and this training has been of the greatest benefit in reducing the number and severity of accidents.

Of the 182 mining properties listed by the mine inspector as alive 100 were idle during the year. A few on the alive list are properties that were unsuccessfully prospected and probably never will be mines, and some of the remainder are exhausted. In reality there are about 150 mines in the county, of which 82 were active during 1926.

Southern Metal Trades Association to Meet

Program of the ninth annual convention of the Southern Metal Trades Association, to be held in the Dempsey Hotel, Macon, Ga., on May 5 and 6, includes the following addresses:

"Banks and Their Relation to Industry," by T. Rad Turner, chairman, board of directors, Macon National Bank.

"Foundry Management and Its Effect on Costs," by William J. Barrett, Metropolitan Life Insurance Co., New York.

"Costs," by John S. Schofield, president J. S. Schofield's Sons Co., Macon.

"Refining Molten Cast Iron," by G. S. Evans, metallurgist Mathieson Alkali Works, Chicago.

"Importance of Uniformity of Coke," by E. J. Rowe, Adams, Rowe & Norman, Birmingham.

"Modern Foundry and Machine Shop Construction," by C. A. Harwick, southern manager, H. K. Ferguson Co., Birmingham.

"The South Awake," by Russell Hunt, secretary-treasurer, Sloss-Sheffield Steel & Iron Co., Birmingham.

"Georgia," by Dr. H. R. McKeene, executive manager Greater Georgia, Macon.

"Safety of Employees in Business," by W. E. Small, president Georgia Casualty Co., Atlanta-Macon.

"Open-Shop—Labor Conditions," by C. A. McAllister, vice-president, Taylor Iron Works & Supply Co., Macon.

"What the Association Has Done for Its Members," by Horace Lanier, president West Point Iron Works, West Point, Ga.

Visits will be made to the plants of J. S. Schofield's Sons Co. and the Taylor Iron Works & Supply Co., both in Macon. P. T. Anderson, president Macon *Daily Telegraph* and president Macon Chamber of Commerce, will act as toastmaster at the banquet. W. E. Dunn, Jr., Healey Building, Atlanta, is secretary of the association.

Seven Reasons for Continued Prosperity, Says Mr. Schwab

Continued prosperity is seen by Charles M. Schwab, chairman Bethlehem Steel Corporation, who surveyed the business situation in a recent address before the Syracuse, N. Y., Chamber of Commerce. "With the Government seeking to conduct its affairs in the most economical manner, arranging the tax laws upon the sound principles advocated by Secretary Mellon, and pursuing a policy of non-interference with the legitimate activities of business, and with the American people working together as they are now doing, we can have confidence that permanent prosperity shall have every opportunity to flourish," he said.

"I am an optimist on the business outlook," declared Mr. Schwab, "for the following reasons:

"1. The American people are hard at work producing new wealth at an amazing speed. That means new purchasing power, new savings, new opportunities for expansion of production.

"2. Nature promises a year of bountiful crops on top of the enormous agricultural production last year.

"3. Wage-earners are working with their employers in a spirit of greater peace than I have seen for 25 years.

"4. Business men have been carrying on their work carefully in recent years and not indulging in speculative expansion.

"5. Railroads are providing a transportation service of greater efficiency than the people of the country have ever enjoyed.

"6. Through the operation of our banking laws and by reason of the prudence of those in charge of our banks, credit facilities have not been taxed and the business of the country is generally sound.

"7. The Government, under the leadership of the President, stands for a policy of sanity, conservatism and progress."

Wholesale Prices Drop Sharply in March

Registering the lowest figure since September, 1924, wholesale prices in March are reported by the United States Bureau of Labor Statistics at 151.5, compared with the 1913 average of 100. This is a drop of 2¼ per cent from the 155 of February and of nearly 6 per cent from the 161 of March, 1925, which was the highest month since early 1921.

Metals shared the decline, being quoted for March at 127.7, which is the lowest for any of the large groups, as has been the case for several months past. Clothing continues to hold the highest prices, while building materials and fuels are practically at the same level, in second position. All three of these items showed a drop during the month.

Investigating Corrosion of Metal in the Ground

WASHINGTON, April 16.—K. H. Logan, electrical engineer, associated with the Bureau of Standards, has left Washington on an extensive trip for the purpose of conducting investigations of the corrosion of pipe and other metal structures in soil, an investigation which the Bureau has been carrying on for years. Mr. Logan will visit a number of cities in the South and Middle West for the purpose of removing specimens of pipe which were buried a few years ago in order to determine the relative weight of corrosion suffered by different kinds of material and different kinds of soil.

To Discuss Merchandising

Self-Regulation in Business the Theme of National Commerce Chamber Meeting

WASHINGTON, April 19.—Merchandising problems will have a prominent place on the program for the forthcoming annual meeting of the Chamber of Commerce of the United States at Washington, May 11 to 13. A special group meeting will give exclusive consideration to three subjects of particular interest to distributers: "Principles Which Should Be Applied to Merchandising by Installment Selling," "The Trade Relations Committee as a Means for Developing Self-Government in Business" and "Practical Uses of a Distribution Census and How It May Be Brought About." A prepared address will be delivered on each question, after which there will be open discussion.

O. H. Cheney, vice-president American Exchange-Pacific National Bank, New York, will talk on installment selling. Mr. Cheney has been a close student of distribution, and his address should develop many interesting aspects of this recent development. Installment selling has pervaded so many fields of retail selling and grown to such an extent that some estimates place its volume as high as 17 per cent of the total sales at retail.

Trade Relations Committees

How the causes of trade abuses and misunderstandings which arise in dealings among manufacturers, wholesalers and retailers may be eliminated by the organization of joint trade relations committees will be discussed by Royal M. France, president Salt's Textile Co., New York. Mr. France, who was a member of the Committee on trade relations of the National Distribution Conference, will point out the benefits from the activities of joint trade relations committees functioning within certain trades. Also, he will discuss the steps that are to be taken to expand this work.

Discussion of the need for a distribution census and how it may be brought about will be undertaken by E. M. West, economist, connected with the Blackman Co., New York. Lack of statistics concerning the number of retailers, wholesalers and other distributers, it is pointed out, has been keenly felt by all classes of distributers. This information is needed when sales quotas are established, when areas are surveyed for market possibilities and when new outlets are contemplated.

Amalgamated Association Seeks Stiff Wage Increases

Manufacturers of iron bars operating their plants under an agreement with the Amalgamated Association of Iron, Steel and Tin Workers of North America are to be confronted with demands for stiff wage increases at the annual conference to be held next month, probably at Atlantic City. The wage committee report presented at the annual convention of the Amalgamated Association in Pittsburgh, as published in the *Amalgamated Journal*, its official organ, notes concurrence in a demand for "a uniform flat rate of $15 per ton for the boiling scale for the year." Such a demand if acceded to by the manufacturers would mean the abandonment of the sliding scale mode of wages for boiling or puddling, based on the average sales price of iron bars as disclosed by the bi-monthly examination of sales records of signatory companies.

What this demand means can be gleaned from the fact that on the sliding scale method of wage adjustment it would be necessary for iron bars to sell between 2.70c. and 2.75c. per lb. to result in a boiling rate of $15 per ton, and the past few bi-monthly settlements have shown average sales prices of 1.95c., 2c. and 2.05c., which produced boiling rates of $11.13, $11.38 and $11.63, respectively. The demand really amounts to an increase of almost 32 per cent and is bound to have resistance, since market conditions suggest no early likelihood of the price of bar iron moving toward the level that calls for a $15 boiling or puddling rate. Paired with this demand is one that five, instead of six heats, shall constitute a day's work except on Saturdays, when the number shall be four, instead of five, heats.

Other demands include a 10 per cent increase for muck bar, guide and 10-in. mill hands, an increase of 15 per cent in the price paid heaters when oil is the furnace fuel; raising the run down wages to 40 per cent of the price paid for heating; that the men be paid for all good iron and for 55 per cent of bad iron; that roll hands be paid an hourly rate for time while changing rolls on bar, 10-in. and guide mills; that 15 per cent be advanced on the base price of ¼ in. rounds; that the starting time on finishing mills be not earlier than 6 a. m., this not to apply to the Saturday turn and that no heats shall be charged on finishing mills after 7 hr. 30 min. from the regular time the mill starts to roll; this not to apply on the Saturday turn. Otherwise, the Amalgamated association asks that the 1925-1926 scale of wages and working conditions be continued.

American Mills and the European Rail Agreement

The London *Ironmonger* makes this comment on the recently formed association of European makers of steel rails and the arrangement that existed in pre-war years:

"It is an interesting circumstance that the title of the new rail association, which before the war and until recently was described as the International Rail Makers' Association (I. R. M. A.), has been altered to the European Rail Makers' Association (E. R. M. A.). Before the war the American makers were parties to the arrangement; but in view of the anti-trust laws of the United States they have not taken part in the negotiations which led to the formation of the present association.

"According to our Continental correspondents, surprise is felt at the refusal of Continental groups to quote on inquiries from the American market received since the present agreement was reached, on the grounds that their commitments would not enable them to give delivery, although it is believed that the production of rails on the Continent is not near capacity. It is reported that the requirements of the British and Colonial markets have been reserved for the British manufacturers, and that orders from the Far East will be voted upon by members of the association. The agreement is understood to apply to rails of 35 lb. and upward, and on these sections the Continental makers have advanced prices to £6 for rails and £8 for fishplates."

To Make Metal Container

The Ringer-Worcester Co., Worcester, Mass., has been organized with a Massachusetts charter and has taken space in the factory building of Walden-Worcester, Inc., for the manufacture of steel containers, boxes, cabinets and other kinds of similar sheet steel products. J. Verner Critchley, head of Walden-Worcester, Inc., which manufactures wrenches, is president and treasurer of the new corporation. The other two directors are Soren P. Ringer and John E. White, president of the Worcester Bank & Trust Co. Mr. Ringer is the general manager and designing engineer. The company will manufacture under a process of which he is the inventor and patentee. Manufacturing will begin almost immediately.

Committee on Metals Utilization

WASHINGTON, April 20.—The National Committee on Metals Utilization will meet here at the Department of Commerce on May 13 and organize, basing its plan of organization on experiences it has had in working with the iron and steel and related industries. The committee A will sit as directing group to the office of Metals Utilization in its campaign to eliminate waste in industry.

Flexible Tariff Upheld

President Held within Constitution in Applying Increased Tariff Duties

WASHINGTON, April 20.—The constitutionality of the flexible provisions of the Fordney-McCumber Tariff Act was upheld by the Board of United States General Appraisers in New York recently. The board's decision was based upon a protest made by J. W. Hampton, Jr., & Co., importers, against the collector of customs at the Port of New York, on the classification and assessment of duty on barium dioxide.

The collector's assessment was based on a proclamation of the President of the United States. The importers claimed the proclamation void and unconstitutional because "it is done under and by virtue of an illegal delegation to the executive department of the power to legislate, which power, by Article I of the Federal Constitution, is solely committed to Congress." The importers have announced that they will appeal to the United States Court of Customs Appeals.

It was held by the board that the power vested in the President was distinct and specific and left nothing to his discretion, provided the purpose of the law clothing him with such power were faithfully carried out. Replying to another contention of the importers the board said that it may or may not be true that it would be impossible to reach a definite or accurate finding of the differences between the cost of barium dioxide in Germany and in the United States, "but at least we are bound to assume that, with the resources at the President's command, and presumably used by him in the investigation, his finding of fact was as nearly accurate as it was humanly possible to make it. Nothing more is to be hoped for in any case."

Bids on Warship Hull Steel

WASHINGTON, April 20.—Awards for 2700 tons of hull plates and 1200 tons of shapes for light cruiser No. 24 to be constructed at the New York navy yard, Brooklyn, are expected to be made in about a week or 10 days. A bid of 2.34c. base, delivered at Brooklyn, was made by the Carnegie Steel Co., the Bethlehem Steel Co., the Worth Steel Co., and the Alan Wood Iron & Steel Co., on plates. Bethlehem bid 2.44c., Brooklyn, on the shapes. This figure also was quoted by Carnegie on some of the items in the shape list, although a slightly lower figure was submitted on other items. The bids of 2.34c. and 2.44c., Brooklyn, are equivalent to 1.90c. and 2c., base Pittsburgh, the freight rates from Pittsburgh to Brooklyn being 34c. and the bids carrying the usual 10c. per 100 lb. navy extra.

Steel Rates to Erie Held Unreasonable

WASHINGTON, April 20.—Passing upon a complaint of the Erie Bolt & Nut Co. and others, the Interstate Commerce Commission in a decision last week held that rates on iron and steel articles from the Pittsburgh district and from Washington, Pa., Follansbee, W. Va., Massillon, and Canton, Ohio, to Erie, Pa., are unreasonable and ordered reparation. The decision fixed rates prior to Aug. 26, 1920, and subsequently to July 1, 1922. It held that the present rate from the Pittsburgh district and Canton should not exceed 21c. per 100 lb.

To Survey Progress in Waste Elimination

WASHINGTON, April 19.—Announcement has been made by Ray M. Hudson, chief of the Division of Simplified Practice, Department of Commerce, that the extent of progress in waste elimination during the past five years will be the topic to be considered by meetings forming a program of "Management Week," to be held in over 100 leading commercial and industrial centers during the last week in October.

Mr. Hudson has been made secretary of the National Committee, comprising the American Society of Mechanical Engineers, American Institute of Accountants, American Management Association, Society of Industrial Engineers, the Taylor Society and the Division of Simplified Practice. It is the hope of the committee of sponsoring organizations that interest may be focused on the gains in efficiency of management, which in the past have followed such surveys of wastes in commerce and industry.

Coke Production at a Lower Rate During March

WASHINGTON, April 19.—By-product coke in March showed an increase in total production over that of the short month February of 277,000 tons, or 7 per cent, although the daily rate was less, says the Bureau of Mines. Compared with January, both monthly and daily output decreased, the coke plants operating at about 91 per cent of capacity. In March, the total production was 3,777,000 net tons. Of the 80 by-product plants in existence, 74 were active this month.

Beehive coke production continues to decline. That for March is estimated at 1,158,000 net tons, lower by 244,000 tons, or 17 per cent, than in February. The production of all coke amounted to 4,935,000 tons, by-product plants contributing 77 per cent. Of the total output of by-product coke during March, 3,120,000 tons, or 82.6 per cent, was made in plants associated with iron furnaces.

Purchasing Agents' Convention at Los Angeles

Pacific Coast manufacturers plan to exhibit their products during the four days of the convention of purchasing agents to be held in Los Angeles, June 9 to 12, which will be the eleventh annual international convention of purchasing agents and the first convention of the national association to be held west of the Rocky Mountains. It is estimated that the attendance at the convention and exhibition will include about 1200 purchasing agents from all parts of the United States and Canada.

To Study Mechanization of Coal Mines

The development of the mechanization of coal mines will be studied by a committee authorized at a meeting in New York of officials of two engineering societies and the nation-wide organization of bituminous operators. The committee is composed of H. Foster Bain, secretary American Institute of Mining and Metallurgical Engineers, Harry L. Gandy, executive secretary National Coal Association and Calvin W. Rice, secretary American Society of Mechanical Engineers.

Much Higher Production of Steel Barrels

March output of steel barrels showed 622,949 manufactured during the month by 31 establishments, according to figures compiled by the United States Department of Commerce. This is an increase of more than 100,000 over February and is considerably the largest figure for any month in several years. It compares with 505,429 in March, 1925. Shipments kept close to output, as has been the case for some months. Unfilled orders showed a moderate decline, amounting at the end of the month to 1,645,066 barrels, of which 369,576 barrels were for delivery within 30 days. Stocks have shown comparatively little change for some months, being listed at 50,409 at the end of March.

Production in March is estimated by the Steel Barrel Manufacturers' Association, Bulkley Building, Cleveland, at 55 per cent of capacity, so far as its members are concerned. This includes 30 per cent of the capacity of light barrels and 61 per cent of I. C. C. barrels. The volume of business of members for the month was $1,497,059, representing shipment of 462,087 barrels or 74 per cent of the total output. More than 99 per cent of these shipments were for domestic customers.

Training Apprentices

New England Foundrymen Consider Ways and Means to Develop Molders

APPRENTICESHIP was the topic at the April meeting of the New England Foundrymen's Association, held April 14 at the Exchange Club, Boston. Part of a plan the association has had under consideration is to institute a more general and universal apprentice system in the affiliated foundries. The meeting was presided over by F. L. Harding, Worthington Pump & Machinery Corporation, Blake & Knowles Works, East Cambridge, Mass., chairman of the committe on foundry training. The other members of that committee are H. S. Chafee, Builders Iron Foundry, Providence; T. R. Scott, Brown & Sharpe Mfg. Co., Providence; R. E. Newcomb, Worthington Pump & Machinery Corporation, Holyoke, Mass.; and E. H. Ballard, General Electric Co., Everett, Mass.

Ralph R. Meigs, who is serving an apprenticeship with the planning department of the foundry and pattern shops, General Electric Co., Lynn, Mass., gave his impressions of an apprentice. In his opinion, there are two ways by which an apprentice plan can be successfully carried out: First, by placing boys in a school maintained in a separate part of the plant, and giving them some practical work; second, by making the boy a helper to a workman. In his opinion, the first plan is perhaps more positive, but the second more valuable, the boy quickly learning the "lingo" of the trade. He believes an apprentice system should be made flexible so that, when a boy who has been in training for several months gives no indication of getting ahead, he can be put on some one operation that he enjoys, thereby becoming of value rather than an utter failure.

District Plan Advocated

L. A. Hartley, director of education, National Founders Association, Chicago, gave a strong plea for a district apprenticeship program rather than the individual. He asserted that there have been but three district apprenticeship programs carried out successfully in this country: in the Milwaukee, San Francisco and Pittsburgh districts. Much of his discussion was centered on the Pittsburgh program, recently completed.

When the National Founders Association undertook to propose a district apprenticeship plan it made a deep study of individual systems that have proved successful, with a view to determining the fundamentals. The first fundamental, it found, is to train for the craft; foremen, engineers, etc., are by-products. The second fundamental is that every apprentice be guaranteed advancement while learning his trade; the third is that some related instruction be given; and fourth that some form of agreement, usually written, exist between the boy and the company. These four fundamentals form the backbone of the Pittsburgh plan of apprenticeship.

In the Milwaukee district there are 111 foundry apprentices, a modest number, according to Mr. Hartley. New England should be able to do very much better. He stated emphatically that we want to get boys into the foundry; that it is time action was taken; that hard work along apprenticeship lines must be done. He recalled that our gates are closed to the foreigner and most likely will remain so for some time. He also brought out the fact that 80 per cent of the workers in our foundries are foreign born. He stated that the Pittsburgh public schools are cooperating with the foundry interests. That city proposes to erect a trade school, which will provide foundry practice for boys of 14 or 15 years, and proposes to install a foundry laboratory in another school.

Mr. Harding informed the members present that they would be asked within the next few weeks to place boys in their foundries. Earlier in the evening the Goodwin Bradley Pattern Co., Providence; Ford & Kimball, Concord, N. H.; Milbury Steel Casting Co., Milbury, Mass.; Kilburn Lincoln Machine Co., Fall River; and Union Water Meter Co., Worcester, were elected members of the association. H. S. Chafee, vice-president of the association, announced that the May meeting will be devoted to foundry costs.

Portland Cement Production Less Than Last Year

March production of Portland cement, estimated by the United States Bureau of Mines at 10,323,000 bbl., is less than the 11,034,000 bbl. of March, 1925. As the February and January production figures also were less than last year, the total for the first quarter shows a drop of about 8 per cent. The figure is 25,941,000 bbl. against 28,145,000 bbl.

New Steel Treaters Chapter in Indiana

The first charter for a new group of the American Society for Steel Treating since the admission of San Francisco some two and one-half years ago was issued to the important industrial city of Fort Wayne, Ind., at a preliminary organization meeting held March 13 at the Keenan Hotel.

The following officers (pro. tem.) were elected: Chairman, G. E. Tibbetts, factory manager S. F. Bowser Co.; vice-chairman, E. H. Sohner, assistant superintendent International Harvester Co.; secretary-treasurer, Arthur L. Cramp, past-chairman of the Indianapolis Chapter, and at present machine foreman of International Harvester Co. The following were elected as members of the executive committee: Charles Grimes, heat treating foreman, and F. A. Newman, heat treater General Electric Co.; J. Hentzler, tool room foreman and C. Frauenfelder, Tokheim Oil, Pump & Tank Co.; W. P. Burt, factory superintendent, and George Friess, tool room foreman of the Wayne Tank & Pump Co., and John A. Hanson, chief tool designer, and M. E. Langdon, foundry general foreman of the S. F. Bowser Co.

The first regular meeting of the new group was held in the assembly hall of the Y. M. C. A. on Thursday evening, April 1. Chairman Tibbetts, being ill with grip, the meeting was conducted by Vice-Chairman Sohner. There was an attendance of over 100 to witness the moving pictures on the "Manufacture of Alloy Steel," presented by S. A. Richardson, research metallurgist Interstate Iron & Steel Co. He prefaced the moving pictures with a practical talk on the various methods of the manufacture of steel, explaining in detail what constituted the various grades as well as the effect of different alloying elements. There was an extended discussion at the close. The second meeting of this group, late in April, will be addressed by Prof. John A. Keller, Purdue University.

Steel Treaters at Montreal Organize

Over 40 individuals representing 28 metal working firms petitioned the board of directors of the American Society for Steel Treating for a charter for a Montreal group. The secretary attended the organization meeting on April 7 at Mt. Royal Hotel. After a thorough discussion of the prospects of a group, it was the consensus of opinion that Montreal should have at least 100 to 150 members.

It was decided to elect temporary officers and the following organization was perfected: Chairman, Dr. Alfred Stansfield, associate of the Royal School of Mines, fellow of the Royal Society of Canada and Birks professor of metallurgy, McGill University, and the author of the "Electric Furnaces for Iron and Steel"; vice-chairman, Charles F. Pascoe, metallurgist Canadian Car & Foundry Co. and Canadian Steel Foundries; secretary-treasurer, Fred H. Williams, assistant engineer of tests Canadian National Railways. The following were elected members of the executive commit-

tee: Robert Job, vice-president Milton-Hershey Co.; C. D. Slimpin, industrial engineer Montreal Light, Heat & Power Co.; W. W. Townsend, tool supervisor Montreal Locomotive Works; Robert J. Noaks, superintendent Canadian Pneumatic Tool Co.; H. S. Weldon, metallurgist Canadian Inspection & Testing Co.; Gordon Sproule, assistant professor of metallurgy McGill University, and W. J. Hall, Production Materials, Ltd.

The executive committee held a meeting April 15 at which arrangements were made for the first regular meeting of the new group. Montreal is a live, wide awake industrial center and the enthusiasm displayed indicates another successful division of the A. S. S. T.

Iron and Steel Institute's May Meeting

The annual meeting of the Iron and Steel Institute is to be held at the Institution of Civil Engineers, Great George Street, Westminster, London, May 6 and 7. The new president, Sir W. Peter Rylands, will be inducted and the Bessemer gold medal will be presented to Sir Hugh Bell. Including the address of the retiring president, Sir Frederick Mills, the technical papers will be presented as follows:

Report on the "Heterogeneity of Steel Ingots" by a subcommittee of No. 5 Committee of the institute.

"Coal Blending," by D. Brownlie.

"The Effects of Arsenic on Steel," by A. E. Cameron and G. B. Waterhouse.

"Specific Resistance and Thermoelectromotive Potential of Some Steels Differing in Carbon Content," by E. D. Campbell and H. W. Mohr.

"Magnetic Changes in Iron and Steel Below 400 Deg. C.," by W. H. Dearden and C. Benedicks.

"A Note on the Distribution of Silicates in Steel Ingots," by J. H. S. Dickenson.

"The Ratio of the Tensile Strength of Steel to the Brinell Hardness Number," by R. H. Greaves and J. A. Jones.

"Notes on the 'Combustibility' of Coke and Direct Reduction in the Blast Furnace," by W. W. Hollings.

"Deformation Lines in Large and Small Crystals of Ferrite," by H. O'Neill.

"The Relation Between Space-Lattice Constant and Density of Iron-Nickel Alloys," by A. Osawa.

"The Hardening and Tempering of High Speed Steel," by A. R. Page.

"The Estimation of Phosphorus in Steels Containing Tungsten," by T. E. Rooney and L. M. Clark.

"Effect of Mass in the Heat Treatment of Nickel Steel," by W. Rosenhain, R. G. Batson and N. P. Tucker.

"The Hardness of Carbon Steels at High Temperatures," by I. G. Slater and T. H. Turner.

"Ghost Lines and Banded Structure of Rolled and Forged Mild Steels," by J. H. Whiteley.

"Influence of Segregation on the Corrosion of Boiler Tubes and Superheaters," by G. R. Woodvine and A. L. Roberts.

Announcement was made that the autumn meeting of the Institute is to be held at Stockholm, Sweden, Aug. 26, 27 and 28. On the evening of the first day, a reception is scheduled at the house of Jernkontoret and technical papers are to be presented on the next two days, with arrangements made for visiting industrial enterprises in Stockholm and vicinity. The Jernkontoret will entertain their guests at dinner on the evening of Aug. 27. Sunday, Aug. 29, is to be devoted to visiting iron works and mines in the north and west of Stockholm.

Joint Committee on Foundry Refractories Organized

The joint committee on foundry refractories, organized under the sponsorship of the American Ceramic Society at the request of the Foundrymen's Association, has been completed and the sub-committees have started their various activities. The committee has been organized along the lines of the joint committee on molding sand research, with the object of studying the needs of the foundry industry and its refractory requirements. The personnel of the committee brings together experts in refractories and in the foundry industry.

The general committee is headed by L. C. Hewitt, as general chairman, and J. L. Cummings as general secretary. There are two representatives from the American Ceramic Society, three from the American Foundrymen's Association, two from the American Refractories Institute, one from the American Malleable Castings Association, one from the American Society for Testing Materials, two from the American Electrochemical Society, one each from the United States Bureau of Standards, the United States Bureau of Mines and the Division of Simplified Practice of the United States Department of Commerce, one from the Steel Founders' Society of America and one from the Electric Steel Founders' Research Group, and two from the Institute of Metals Division of the American Institute of Mining and Metallurgical Engineers.

Sub-committees have been appointed on a survey of service conditions covering the non-ferrous industry, the malleable industry, the cast iron industry and the steel casting industry; on testing and specifications; on standardization and simplification, and on review of literature.

COMING MEETINGS

April

American Electrochemical Society. April 22 to 24. Annual meeting, Chicago Beach Hotel, Chicago. Colin G. Fink, Columbia University, New York, secretary.

National Supply and Machinery Distributers' Association. April 26, 27 and 28. Twenty-first annual convention, Ambassador Hotel, Atlantic City, N. J. George A. Fernley, 505 Arch Street, Philadelphia, secretary-treasurer.

National Foreign Trade Council. April 28, 29 and 30. Thirteenth annual convention, Charleston, S. C. O. K. Davis, India House, Hanover Square, New York, secretary.

May

American Society of Mechanical Engineers. May 3 to 6. Sectional meeting, Providence-Biltmore Hotel, Providence, R. I., headquarters. Calvin W. Rice, 29 West Thirty-ninth Street, New York, secretary.

Southern Metal Trades Association. May 5 and 6. Ninth annual convention, Dempsey Hotel, Macon, Ga. W. E. Dunn, Jr., Healey Building, Atlanta, Ga., secretary.

Iron and Steel Institute. May 6 and 7. Annual meeting, house of the Institution of Civil Engineers, Great George Street, London. G. C. Lloyd, 28 Victoria Street, London, S. W. 1, England, secretary.

Association of Chemical Equipment Manufacturers. May 10 to 15. Second Chemical Equipment, Machinery, and Process Engineering Exposition, Hotel Hollenden and Public Hall, Cleveland.

American Refractories Institute. May 12. Annual meeting, Bellevue-Stratford Hotel, Philadelphia. Dorothy A. Texter, 2202 Oliver Building, Pittsburgh, secretary.

American Gear Manufacturers' Association. May 13 to 15. Tenth annual meeting, Book-Cadillac Hotel, Detroit. T. W. Owen, 2443 Prospect Street, Cleveland, secretary.

Joint Convention of American Supply and Machinery Manufacturers' Association, and Southern Supply and Machinery Dealers' Association. May 18, 19 and 20. Hotel Statler, St. Louis. J. D. Mitchell, 1819 Broadway, New York, secretary-treasurer.

American Iron & Steel Institute. May 21. Hotel Commodore, New York. E. A. S. Clarke, 40 Rector Street, New York, secretary.

American Iron, Steel and Heavy Hardware Association. May 25, 26 and 27. Annual meeting, Atlantic City, N. J. Benjamin R. Sackett, 502 Arch Street, Philadelphia, secretary.

European Markets Nearly Stagnant

British Labor Troubles and Continental Cartels Feature the Week's Market Conditions

(By Cable)

LONDON, ENGLAND, April 19.

THE coal situation is critical and trouble in the engineering plants continues to threaten. The iron and steel markets, consequently, are unsteady. Pig iron is still quiet, but Cleveland producers are successfully maintaining prices. Hematite is weak with the output exceeding current demand. Foreign ore continues dull and Bilbao Rubio is still nominally 21s. to 21s. 3d., c.i.f. Tees.

Domestic trade in finished iron and steel is moderately active and makers have increased quotations on plates and sections by 2s. 6d. Prices of sections for export which are also controlled have been fixed at £6 5s., f.o.b. Export buying is generally poor as a result of Continental competition and the uncertainty of future prices.

Tin plate is easy with sales poor, but the volume of inquiry increasing. Makers are preparing as far as possible for the expected coal shortage. Galvanized sheets are weak, with no substantial demand in the market. Some makers are securing a fair number of small orders. Black sheets are dull and heavy gages have been reduced to prevent further orders going to Continental mills. Japanese demand for light gages is small.

Continental markets are easier, following further depreciation of the franc, but moderate sales of semi-finished material have strengthened sheet bars to £4 11s., f.o.b. Antwerp. Merchant bars have sold at £5 1s. 6d., f.o.b.

RAIL SYNDICATE QUOTAS SET

Definite Information Lacking — Members of German Steel Merger Receive Allotments of Business

BERLIN, GERMANY, April 4.—Definite information on the status of the International Rail Makers' Association is still unobtainable. While it is generally agreed that in the recent Paris negotiations it was decided to reestablish the association, it is apparently still far from actual operation. According to the available information, however, membership will include Great Britain, France, Belgium, Luxemburg and Germany, with the prospect of later including the smaller producers such as Poland, Czechoslovakia, Austria and possibly Italy and Spain. One report states that the export allotments of the participating countries will be 43 per cent for Great Britain, 40 per cent for Germany and France, 10½ per cent for Belgium and 6½ per cent for Luxemburg. The recent report that subsidiary groups of makers have been formed and South American markets apportioned to the various groups is denied. One effect of the formation of the syndicate, regardless of whether it is operating or not, is the increase of the export price of rails to £6 per metric ton, f.o.b. Antwerp, which is about 15s. higher than the previous German quotation. This advance in price, based on German exports of about 200,000 tons a year, represents a gain in the financial return to German mills of about 3,000,000 m.

Some progress is also reported to have been made toward the formation of an international tube syndicate, the principal obstacle being the refusal of certain French producers to join. Among the wire mills an international agreement has been effective for several months. Negotiations for the formation of an international steel syndicate have not yet passed the stage of preliminary discussion. The Western Steel Corporation in a recent statement on the results of the Paris negotiations for an international syndicate says that while there was general agreement that the present "dumping" creates a decidedly unsatisfactory situation, "it was quite clear that the creation of a syndicate will prove to be extraordinarily difficult, as it is almost impossible to create separate selling organizations in the different countries for the various grades and kinds of steel." At the meeting there was some discussion as to the practicability of adapting production to con-

British and Continental European prices per gross ton, except where otherwise stated, f.o.b. makers' works, with American equivalent figured at $4.86 per £ as follows:

Durham coke, del'd	£0	18½s.				$4.50	
Bilbao Rubio ore‡	1	1½				5.22	
Cleveland No. 1 fdy.	3	12½	and	£3	13s.*	17.62 and	$17.74*
Cleveland No. 3 fdy.	3	10	and	3	10½*	17.01 and	17.13*
Cleveland No. 4 fdy.	3	9	and	3	9½*	16.77 and	16.88*
Cleveland No. 4 forge	3	8	and	3	8½*	16.52 and	16.65*
Cleveland basic	3	10	and	3	10½*	17.01 and	17.13*
East Coast mixed	3	16½	to	3	17	18.59 to	18.71
East Coast hematite	3	16	to	3	16½	18.46 to	18.58
Ferromanganese	15	10				75.33	
*Ferromanganese	14	5	to	14	10	69.25 to	70.47
Rails, 60 lb. and up	6	15	to	7	5	32.80 to	35.24
Billets	6	0	to	7	10	29.16 to	36.45
Sheet and tin plate bars, Welsh	6	5				30.38	
Tin plates, base box	0	19	to	0	19½	4.62 to	4.73
Black sheets, Japanese specifications	14	12½				71.08	
						C. per Lb.	
Ship plates	7	0	to	7	10	1.52 to	1.62
Boiler plates	11	0	to	11	10	2.39 to	2.49
Tees	7	5	to	7	15	1.57 to	1.68
Channels	6	10	to	7	0	1.41 to	1.51
Beams	6	5	to	6	15	1.35 to	1.46
Round bars, ¾ to 3 in.	7	10	to	8	5	1.63 to	1.79
Steel hoops	10	10	and	11	0*	2.28 and	2.39*
Black sheets, 24 gage	11	0	to	11	5	2.38 to	2.44
Galv. sheets, 24 gage	15	5	to	15	10	3.30 to	3.36
Cold rolled steel strip, 20 gage	18	0				3.91	

*Export price.
‡Ex-ship, Tees, nominal.

Continental Prices, All F. O. B. Channel Ports

Foundry pig iron:(a)						
Belgium	£3	5s.			$15.80	
France	3	5			15.80	
Luxemburg	3	5			15.80	
Basic pig iron:(a)						
Belgium	3	1½			14.94	
France	3	1½			14.94	
Luxemburg	3	1½			14.94	
Coke	0	18			4.37	
Billets:						
Belgium	4	7	to	£4 10s.	21.26 to	$21.87
France	4	7	to	4 10	21.26 to	21.87
Merchant bars:					C. per Lb.	
Belgium	5	1½	to	5 6	1.12 to	1.15
Luxemburg	5	1½	to	5 6	1.12 to	1.15
France	5	1½	to	5 6	1.12 to	1.15
Joists (beams):						
Belgium	4	15½	to	4 16	1.05 to	1.06
Luxemburg	4	15½	to	4 16	1.05 to	1.06
France	4	15½	to	4 16	1.05 to	1.06
Angles:						
Belgium	5	2	to	5 4	1.12 to	1.15
⅛-in. plates:						
Belgium	5	17	to	6 1	1.29 to	1.33
Germany	5	17	to	6 1	1.29 to	1.33
¼-in. ship plates:						
Belgium	5	7½	to	5 10	1.18 to	1.21
Luxemburg	5	7½	to	5 10	1.18 to	1.21
Sheets, heavy:						
Belgium	6	3	to	6 4	1.35 to	1.37
Germany	6	3	to	6 4	1.35 to	1.37

(a) Nominal.

sumption, but nothing definite was decided upon. Should an international agreement be made which governed only production the German ambition to create an international organization for control of output, prices and selling methods would only be in part realized.

Formation of the Western Steel Corporation has been formally approved by the shareholders of the merging corporations and the remaining details are expected to be cleared up in a few days. It is understood that the quotas of the companies included in the merger will be as follows: Gelsenkirchen Bergwerks A. G., 15.1 per cent; Deutsch Luxemburgische Bergwerks, 15.1 per cent; Bochum Steel Co., 9.3 per cent; Phoenix A. G., 23.65 per cent; August Thyssen & Co., 26 per cent; Rheinische Stahlwerke, 8.5 per cent; Vereinigte Stahlwerke van der Zypen und Wissener, 2.35 per cent. It is understood that the Thyssen works, which are best equipped for the purpose, will handle most of the pig iron production for the corporation.

Efforts to create a thin sheet syndicate have been unsuccessful, so that this product continues as the only one controlled by the Raw Steel Syndicate, which has no separate selling organization. Unless objection is made by members of the Pig Iron Syndicate before July 1, it will be automatically renewed for another four years at its expiration on Dec. 31 of this year. It is, however, believed almost certain that some objection will be made to its renewal on the present basis. The pig iron produced by members of the syndicate, which are for the most part steel works and rolling mills, is for their own consumption, the total amount of merchant iron available from the syndicate members being only about 567,200 tons a year. As the demand for steel has declined so greatly in recent months it is expected that some of the corporations will demand increases of their quotas for the merchant market.

WIRE NAILS COMING IN

Warehouse Buys 5000 Kegs for Stock and 2000 More Are Under Inquiry—Japanese Inquiry for Tin Plate

NEW YORK, April 20.—Sales have been made of German wire nails by importers in the United States. One such New York representative has sold 5000 kegs of wire nails of various sizes for stock in a warehouse on the Atlantic seaboard. The price is understood to have been considerably lower than $3 per 100-lb. keg, c.i.f. duty paid, a recent quotation by German sellers. There is an inquiry from a company in the South for 2000 kegs of wire nails on which a quotation of $2.64 per 100-lb. keg, c.i.f. Mobile, duty paid, is reported as submitted by a Belgian-Luxemburg organization. Deducting from this price an ocean freight of about 17c. per 100 lb., an inland freight to Antwerp of about 8c. per 100 lb., and the duty of 30c. per 100 lb., the mill price would stand at about $2.10 per keg.

Purchases of foreign reinforcing bars have decreased somewhat, but there is a moderate demand for small lots of structural material, particularly in the New England district and the South. A New York importer recently closed about 600 tons of structural steel, but including a small lot of reinforcing bars for Jacksonville, Fla. There has also been some small business in hot rolled strip steel at 2.60c. per lb., c.i.f. Atlantic port, duty paid.

In the export market the outstanding inquiry from Japan is for 27,750 base boxes of tin plate from the Nippon Oil Co., bids opening April 21. August, September, October delivery is specified. The Shibaura Engineering Co. in Japan is in the market for 500 tons of electrical sheets, bids opening April 20. The Hokushinkai Oil Co. has awarded 60,000 ft. of line pipe to Mitsui & Co., New York. The Kawasakai Dockyard recently closed on about 5000 tons of open-hearth sheet bars with a German mill.

A prominent Japanese export house in New York has received the following cabled information on the situation in black sheets in Japan: "The black sheet market shows a declining tendency owing to the favorable rate of exchange and in expectation of German competition. In addition, the Kawasakai Dockyard's present stock is 25,000 tons. No improvement in the market is expected in the near future. Present quotation is equivalent to £15 10s. per ton, c.i.f., duty paid, with no buyers."

GERMAN MARKET QUIET

Export Trade Improves But Prices Are Low—Contract Taken for Electric Smelter in Mexico

BERLIN, GERMANY, April 4.—The domestic steel market is not materially improved and the scrap market has recently registered a considerable decline. Sales of domestic pig iron, however, have increased slightly but as a whole the market is rather inactive. The pig iron syndicate has retained its March prices for April and output is unchanged at the 35 per cent reduction.

Bars, sheets and semi-finished material continue quiet with but few sales and little inquiry in the domestic market. Export business shows a slight improvement but prices are still low. The export price of bars has declined to £5 6s. per metric ton and competition from French and Belgian mills threatens to cause a further reduction. Demand for tubes both for domestic use and export has increased.

The discounts on purchase price given by the Raw Steel Syndicate to domestic manufacturers buying material, which after manufacture will be sold for export, have been altered in a few instances. In export trade German sellers to the Near East report increased competition from French mills. Siemens-Schuckert is reported to have booked an order for an electric smelting plant for Mexico designed for the consumption of inferior ore and fuel, a process which was exhibited at the Leipzig fair.

Solingen manufacturers of high-grade steel are booking increased foreign business. While shipbuilding showed some improvement up to the first of this year, the leading shipyards of Hamburg are again laying off workmen. To increase domestic sales of agricultural tractors a government credit is being considered by the Reichstag.

United States Exports and Imports in 1925

Practically all of the figures reported in our columns for exports and imports of iron and steel and other metal materials are on the basis of tonnage. From a compilation recently made by the Foreign Commerce Department of the Chamber of Commerce of the United States the following dollar figures are gleaned for movements of such materials in 1925:

	Thousands of Dollars	
	Exports	Imports
Automobiles, parts, etc.	$303,106	.....
Copper	140,221	$62,701
Agricultural machinery	77,937	.....
Iron and steel plates, sheets, etc.	58,078	.....
Iron and steel pipes, fittings, etc.	29,543	.....
Tin bars, blocks, pigs, etc.	.....	95,121
Metal-working machine tools	22,037	.....
Brass and bronze	18,565	.....
Typewriters	18,020	.....
Hand tools	17,302	.....
Lead pigs, bars, etc.	15,599	10,458
Automobile engines	15,274	.....
Railroad cars and parts, including wheels and axles	14,565	.....
Cutlery	13,094	.....
Construction and conveying machinery	12,839	.....
Structural iron and steel	11,839	.....
Zinc blocks, pigs and slabs	11,654	.....
Textile machinery	11,489	.....
Mining and quarrying machinery	10,562	.....
Oil well machinery	10,249	.....
Copper ore and matte	.....	20,287
Clocks and watches	.....	12,859
Platinum	.....	11,301
Crude aluminum	.....	10,180
Manganese ores	.....	7,967
Pig iron	.....	7,951
Nickel ore, matte and alloy	.....	7,604
Iron ore	.....	6,895
Ferromanganese and alloys	.....	6,870

Business Analysis and Forecast

BY DR. LEWIS H. HANEY

DIRECTOR, NEW YORK UNIVERSITY BUREAU OF BUSINESS RESEARCH

Favorable and Unfavorable Factors Affecting Business May Be Summarized as Follows:

Favorable Factors

1. Easier trend in money rates.
2. Efficiency of manufacturing labor.
3. Prevalence of caution; mercantile inventories light.
4. Continued gain in bank debits.

Unfavorable Factors

1. The P-V Line declines.
2. Continued decline in commodity prices and weakness in steel scrap.
3. Building activity fails to show the usual seasonal gain.
4. Decline in automobile production.
5. Termination of expansion in retail trade.
6. Labor employment and payrolls decline.

IT is difficult to find any favorable indications of a positive character concerning the business future. It is true that present activity in production and distribution is very large. Evidences of this fact appear in bank debits, railway car loadings, building, production of pig iron and steel, etc. The large current activity, however, is, "water over the dam." The most significant facts are the current *trends*—the direction in which the more barometric industries are moving. Looked at in this way, we find that business in general appears to be entering a downward movement. Recession is already under way in a good many lines and a decline in new business is reflected in the statistics of sales, orders, bookings, etc.

The favorable indications listed above are such as merely assure us that there will be no drastic setback. Easy money markets at the present time, and the absence of monetary strain in the recent past, tend to reduce business failures and to encourage new enterprises and investment buying. The prevalence of caution, past and present, means that a severe slump is improbable.

The P-V line, which turned downward in November, declined again in March. This is a general business barometer which usually anticipates the trend by about five months. Its decline is largely due to the continued recession in commodity prices. The drop in prices means that the supply of commodities is too large to be marketed at recent price levels. A buyers' market is the result. The P-V line indicates that moderate and orderly recession in business will prevail during the next four or five months. The situation shown in Fig. 1 is in some respects similar to that of a year ago, only the P-V line has fallen a little more sharply and will probably go lower than it did then.

The production of steel ingots in March appears to have temporarily outrun the indications given by the P-V line. No business barometer is infallible, but it may turn out that so high a rate of steel production in March was ill advised. In any case, it is probable that April may well show a more than seasonal decline in the ingot output.

Halt in Downward Trend

BOTH the barometers shown in Fig. 2 reflect a halt in the downward trend that has been predominant for several months. This halt, however, cannot be considered as a final turn in the barometers. The trend of heavy melting steel scrap at Pittsburgh merely showed no change, and it is to be remembered that the curve is based on monthly averages. Steel scrap is still weak and will probably average lower in April. The upward turn in the curve that shows the rate of change in unfilled steel orders is far from conclusive, as similar turns appeared in 1923 and again in 1925, only to be followed by renewed declines. Nevertheless, it is true that as a rule such changes in trend do mark the approach of the end of declines in these barometers. If and when the barometers hit bottom, the recession in industry which they had forecast would also come to an end in a few months. Therefore, some encourage-

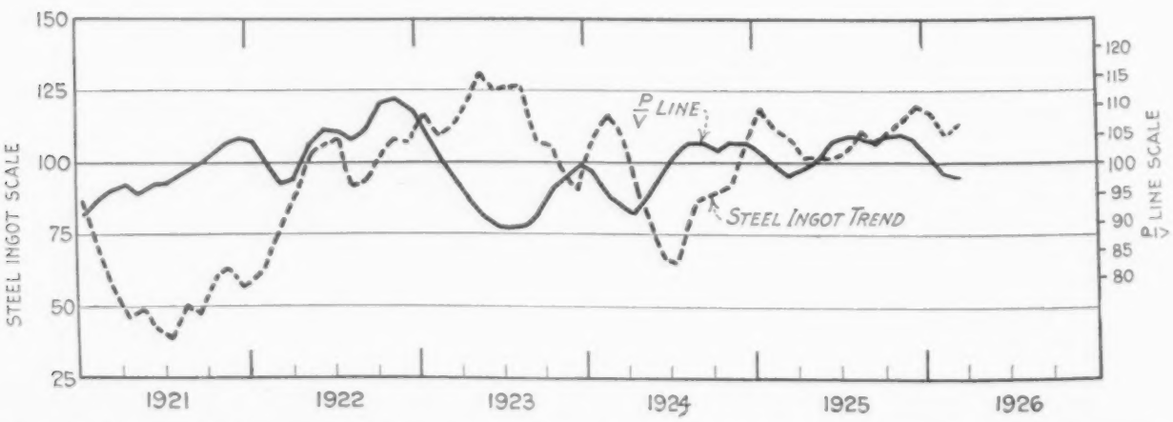


Fig. 1—The P-V Line Generally Anticipates the Trend of Business by About Five Months: It Turned Downward Again Last Month

In This Issue

Plowing money back into business rather than paying out in dividends often made necessary by replacement of obsolete plant, depreciation, etc.—Present cost of plant replacement several times the original cost in most cases.—Page 1150.

Steel barometers show halt in downward trend; may anticipate end of declines in unfilled orders and scrap prices.—Many favorable factors in business situation indicate no drastic setback may be expected.—Page 1149.

Underfeed stoker proves successful in melting furnace at new malleable foundry.—New air furnace employed does not require any top blast, less oxidation takes place and lower percentage of pig iron is required with sprues and scrap.—Page 1119.

Bureau of Labor wholesale price index lowest since September, 1924.—Average now nearly 6 per cent lower than year ago; metals share decline.—Page 1139.

For first time in its history, National Metal Trades Association goes through year without any strikes in members' plants.—Conciliation Board of Department of Labor considered 550 strikes and controversies in same time.—Page 1124.

***Welding** 245 ft. runway for 10-ton crane having 100-ft. span saves 15 per cent in shop labor costs is claim.*—Also reduced amount of material used and engineering and drafting room work.—Page 1132.

Billion dollar annual reduction in national debt is wiped out by increase of nearly $1,250,000,000 *in state and local expenditures.*—Need of budget systems in State and local governments very great, says Ogden L. Mills.—Page 1128.

Domestic producers ask 50 per cent increase in pig iron tariff.—Imports in Atlantic district alone represent loss of 300,000 tons annual business to domestic furnaces.—Page 1172.

Countervailing duty on pig iron imported from India announced by Treasury Department.—Based on bounty given producer by Indian government; no indication yet as to amount of duty.—Page 1172.

Cost of refractories in steel making amounts to 30c. to $2.50 per ton of product.—Total annual cost of steel-making refractories may run to more than $110,000,000.—Page 1130.

Dense brick better for open-hearth checker chambers than porous brick, says John W. Lething, Laclede Steel Co.—Higher capacity for absorbing and retaining heat; sometimes lasts for more than eight years.—Page 1130.

More locomotives retired from service last year than were installed.—Total declined 1300 in year; average number of freight cars increases in same length of time.—Page 1133.

Canadian steel production has grown less than 1½ per cent in last fifteen years.—Increase of 75 per cent in same period here; Canadians ask for tariff protection.—Page 1136.

Senator Brookhart claims 4 per cent return is enough for capital to earn in war times.—Based on claim that this is all American people can produce as a whole; Bernard M. Baruch opposes conscription of capital in war time.—Page 1138.

March sales of sheets 68 per cent above February total.—Unfilled sheet orders after decreasing in January and February, increased almost 1100 tons in March.—Page 1138.

By-product coke production at lower rate during March; total 7 per cent above February.—74 active by-product plants produce 3,777,000 tons; beehive output, 1,158,000 tons, was about 17 per cent below February.—Page 1141.

March output of steel barrels largest for any month in recent years.—622,949 produced last month is more than 100,000 above February total; plants now operating at about 55 per cent of capacity.—Page 1141.

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As Wood Declines, Metal Advances

A RECENT unsigned help wanted advertisement in a midwestern newspaper brought an applicant whose letterhead bore the legend "Commission Lumber." This paragraph of his letter is deeply significant:

> The lumber business is facing a diminishing source of supply, and an increasing number of wood substitutes. The result is a fluctuation of market conditions, which cause a standstill in buying often for months at a time.

And, as pointed out in the series of articles which have been running in THE IRON AGE, metal, wood's chief "substitute," has as yet barely begun to attack wood's great stronghold, dwelling construction.

For News Summary See Reverse Side

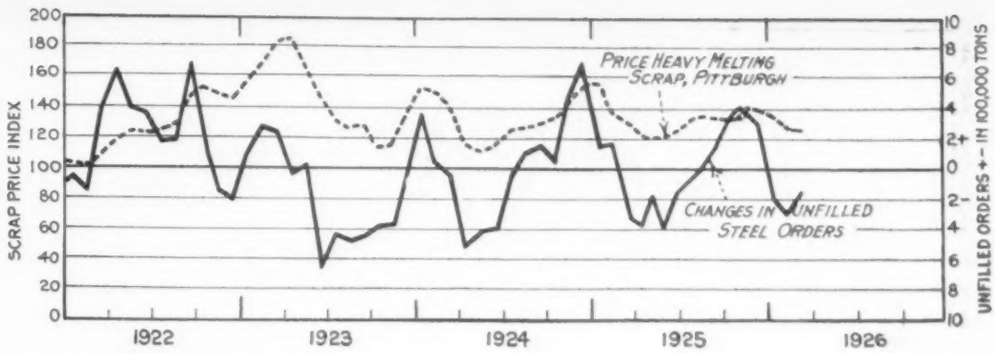

Fig. 2—The Curve Showing the Rate of Change in Unfilled Orders Last Month Indicated a Halt in the Downward Trend Which Has Been in Evidence for Several Months

ment may be drawn from the existing situation, though if any improvement is to develop it can hardly be expected for several months.

Briefly stated, the facts concerning Fig. 2 are (1) the unfilled orders of the Steel Corporation, at 4,380,000 tons, represented a decrease of approximately 237,000 tons in March. The decrease in February was 266,000 tons. Moreover, there is usually a decrease of from 1 per cent to 2 per cent in the March unfilled orders. Accordingly, it may fairly be said that the decline was really not so large as it seems and that the rate of the decline was actually smaller. (2) Heavy melting scrap at Pittsburgh averaged $17.50 in March which was the same as the April average. At this writing, however, the market is quoted at $17 and is not strong.

The third chart shows a picture of the trends of the business birth rate and death rate.

New Enterprise Declines

THE trend of new business enterprises is downward, whether such enterprises are measured by number or by amount of capitalization. The formation of new enterprises had risen to an abnormally high level last July and August and again in November and December. Now it has fallen to a more normal range, but the decline indicates a sharp decrease in optimism and shows that "business sentiment" is unfavorable to expansion.

Business failures as reported by Dun numbered 1984 in March against 1801 in February and 1859 a year ago. The March failures represent a rather large excess over our estimated normal and the trend is clearly upward. This is due to the continued decline in commodity prices and to the current recession in business. It may be noted, however, that there have been relatively few large failures, as the total liabilities of the failing concerns are relatively small.

The whole situation, when compared with developments in recent years, most nearly resembles that which existed in March, 1923, though at that time both failures and new enterprises established were at lower levels than now.

The outstanding fact shown by Fig. 4 is the clear evidence of a downward trend in building activity. Our adjusted index has declined during the last two months and in March stood at the lowest point reached since June, last year. In March the contracts awarded as reported by the F. W. Dodge Corporation were over 85.9 million square feet against over 54.8 million in February, but this increase was considerably less than the usual seasonal gain between these two months.

(*Concluded on page* 1174)

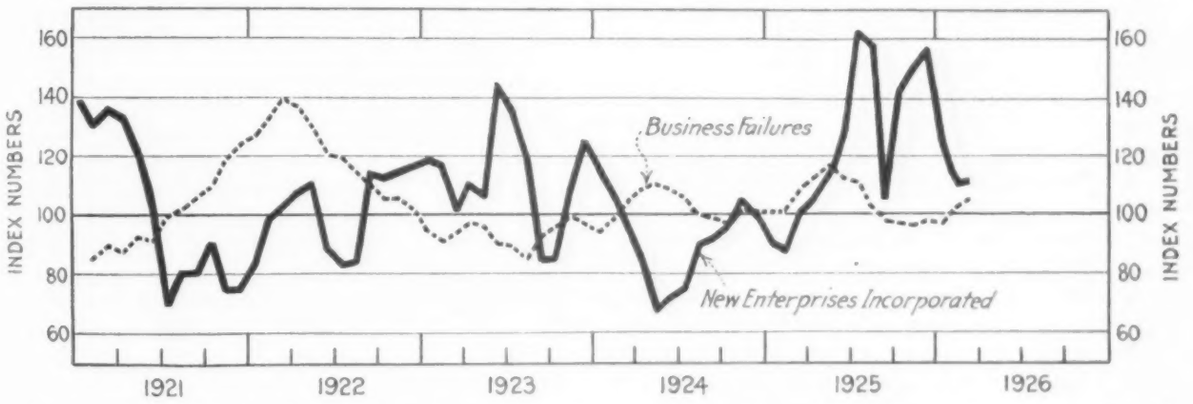

Fig. 3—The Number of New Businesses Formed Has Fallen to a More Normal Rate Than That of November and December, Indicating That Sentiment Is Not Favorable to Expansion

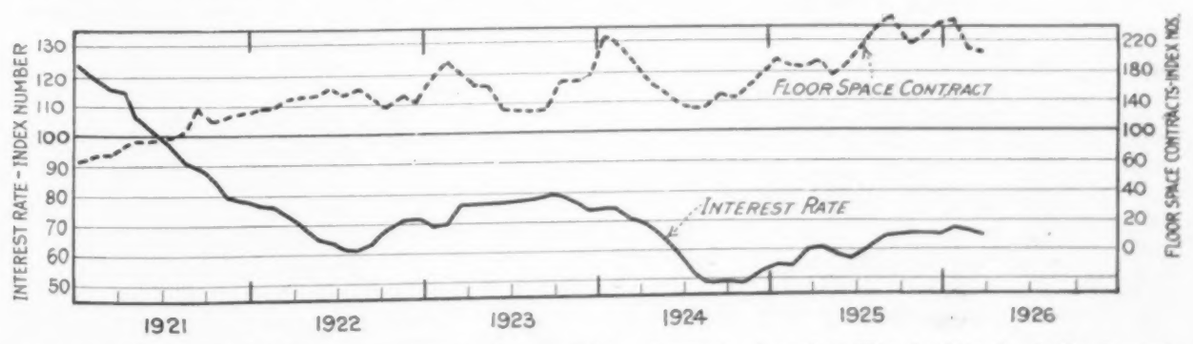

Fig. 4—The Index Based on Square Feet of New Building Contracts Awarded Was in March at the Lowest Point Reached Since Last June

ESTABLISHED 1855

THE IRON AGE

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Steel Common Dividends

WITH new insistence the Steel Corporation was urged on behalf of some of its stockholders, at its annual meeting on April 19, to raise the dividend payment on its common stock. For a long time the *Wall Street Journal* has been advocating such an increase. The argument is simply that the company has the means to do it and should cease plowing back into its property quite so much as heretofore it has been doing. On the face of things the directors had rather a weak hand in that the $7 dividend gives a yield of only 5.8 per cent to anyone who buys the stock at 120, while they made their last sale to employees at a materially higher price.

The great question is, of course, whether the Steel Corporation really makes so much money as it seems to make. Its annual net earnings are very large, and for reasons often pointed out are more per ton than those of independent steel companies. A certain portion of the earnings is distributed as dividends and the remainder is credited to surplus, which is constantly accumulating. That surplus does not accumulate, however, in the forms of bank credit and of liquid investments, but rather in the form of property. That is what is meant by "plowing in."

In this connection Judge Gary points out—emphasizing what has been said repeatedly in these columns—that the present cost of plant replacement is several times the original cost. This associates itself with the estimate frequently made that the book value of Steel Corporation shares is twice their market value or more. That is apparently erroneous, for the corporation has not exhibited an earning capacity commensurate with these book value ratings. If it had done so, the book value and market value would be more nearly alike. Rather the case may be that more millions should have been charged off from year to year for depletion and depreciation, or, as in the case of the $25,000,000 deducted from the net income of 1925, appropriated for "additions, improvements or betterments to plants and property."

To the suggestion that bonds be put out against plant improvements, so that larger dividends could be paid, Judge Gary appropriately replied at Monday's meeting that bond issues are already large. Whereas $17,209,000 of bonds were retired in 1925, issues made during the year amounted to $15,416,000, making the net decrease less than $1,800,000, while the total outstanding on Dec. 31 was $509,479,000.

This subject is so immense and so complex that we do not venture to pursue it far. There would need to be an engineering, physical survey of the property of the corporation to begin with; and that would be of the order of the physical valuation of the railroads that the Interstate Commerce Commission has been attempting to make.

"Plowing in" is a convenient expression that may cover many economic shortcomings. Young enterprises are frequently and commendably developed by "plowing in." After a while the sapling is found to have become a tree that blossoms and bears much fruit for its stockholders. The great British producer of artificial silk, known as Courtaulds, is the most recent, spectacular example of this. Old enterprises are frequently, and also commendably, kept going by "plowing in," but in some instances it may be for the benefit of the tax gatherers and the laboring personnel rather than for the stockholders.

What is called "plowing in," however, is often in reality not that at all, but is rather a euphemism for upkeep, the replacement of obsolete plant, etc. This is why it used to be said, and perhaps still is, that a railroad has to earn two dollars to pay one, and why a new mining enterprise may be figured as of a certain net earning capacity with the prospect of paying 75 per cent of it in dividends; though it usually remains for the consulting engineer rather than the promoter to point that out.

This is a subject on which corporate managers are often not sufficiently frank toward their stockholders. It is all very well to talk of putting annually a proportion of net earnings back into the business, but it would be better to explain just how that is done. We are saying this as a generalization, and not at all as a veiled criticism of the Steel Corporation, which has been uncommonly specific in its statements relative to expenditures for maintenance, replacement and new construction.

Richness Preserved in Lake Ores

FOUR months earlier than in recent years the Lake Superior Iron Ore Association issues its average analyses of Lake Superior iron ores shipped during the season. The average richness of the ores has not varied greatly in the past 15 years. If anything, there has been a slight improvement, after distinct decreases up to the year 1911. The average has been running a fraction above the 51½ per cent iron content, natural state, that is used in market transactions to represent the base ore.

In general, the history of the Lake Superior region has been that of the richest known ores being mined first, and for many years there have been no discoveries such as would seriously affect the average of all ores shipped. Even by 1902 there had been quite a decrease in iron content, the average of all ores shipped in that year being 56.22 per cent, natural. There were successive decreases until in 1911 the average passed below 52 per cent. From that year on, or in 15 years, there was one year that showed below 51.20 per cent (1916) and only one year above 52 per cent, that year being 1921, with 52.07 per cent. A lean year in the trade brings out only the richer ores.

Last year's average was 51.74 per cent, against 51.72 per cent for 1924. For a fine comparison, the average of the past five years is 51.83 per cent, against 51.43 per cent in the preceding five years, showing nearly half a unit gain. Thus clearly the trend is not downward.

There has been a more substantial improvement in the ores than these bare figures would indicate. Bessemer ores are mined only as called for. They are mined because they are Bessemer, not because they are rich, and the relative demand for Bessemer ores has been decreasing. As they are richer than the non-Bessemer ores, the decline in their proportion of the total ore tends to pull down the average iron content of all ores. Through the year 1906 Bessemer ores constituted more than 60 per cent of all the Lake Superior ores shipped, while in the past two years the proportion has been between 27 and 28 per cent.

While the influences are quite complicated, the general point is that the richness of Lake Superior ores, as shipped in the past 15 years, has not been maintained by nature, in the character of the deposits taken from year to year, but by more careful selection of ore, better mining, and an increasing amount of beneficiation. Lean ores that are beneficiated help more and more to pull up the general average.

These Lake Superior ores are quite rich, relative to the average of ores mined elsewhere in the country, and the ores used abroad, but they need to be. Except for a relatively small tonnage, they have the highest carrying charge to blast furnace of any ores in the world. The transportation methods are wonderfully efficient or the cost would be much greater still.

INTERESTING data on world consumption of high-grade manganese ores are available in the reported imports of the large steel-making nations. For the United States, Great Britain, France, Germany, Belgium and Luxemburg the total of such imports in 1925 was 1,680,100 tons. This quantity is equivalent to a ferromanganese output of about 670,000 tons. Last year's ore movement to the countries mentioned was thus not far from the world production of 1,667,500 tons of manganese ore in 1924. Estimates of the steel output for the world in 1925 place the total at 87,000,000 tons, which at 17 pounds of ferromanganese to the ton would require about 511,000 tons of the ferroalloy. Thus it appears that the ore movement of last year was sufficient for the manufacture of 30 per cent more ferromanganese than was actually consumed in steel-making, and at that the total of ore shipped was considerably below the pre-war world production of about 2,150,000 tons in 1913. On this showing the outlook is for only moderate, and probably sharply competitive, prices for manganese ores for some time to come. That statement applies also to ferromanganese, seeing that world output of steel in 1926 is not likely to exceed that of last year.

Widespread Price Declines

THAT the Bureau of Labor's commodity price index has dropped suddenly to its lowest level in 18 months is important and prompts inquiry into details. There was a drop of 3½ points from February to March, whereas the total range in the preceding 17 months was only nine points, the extremes being only 4½ points, in either direction, from the mean.

The 151.5 index number now issued for last month is impressive from a longer range viewpoint, for in almost four years, or since April, 1922, the index has run below this March level only in 12 months, the lowest point in the period being June, 1924, when commerce was suffering from a severe reaction, said to be due to political uncertainty, which clearly is absent now.

Occasionally changes occur in the general index due to large changes in individual items which do not concern a great many people. This time the declines in prices are widespread, as the percentage changes from February to March, given below, will indicate:

February to March Changes

Farm products	—4
Foods	—1
Clothing materials	—2
Fuels	—2
Metals and metal products	0
Building materials	—1
Chemicals and drugs	0
Housefurnishing goods	0
Cattle feed	—4
Leather	0
Paper and pulp	—4
Miscellaneous	—3
All items	—2

It was not a case of adversity causing these declines. Business was very active. Check payments, as given by the Department of Commerce with seasonal adjustment, rose from 135 to 149 from February to March, against a decrease in the same months of 1925 from 129 to 126, the base of these relatives being the monthly average in 1919.

We all know that business was very active in both February and March and the common judgment would probably be that it was somewhat more active in the latter month.

That there has been strenuous sales competition in practically all commodity markets is equally well known; but there has been very active competition

for a long time. The competition did not arise from lack of demand, but from the markets being well supplied.

There has been continued growth in efficiency and economy since the foolish time of 1920. At some time in the interval our efficiency has passed above the best pre-war level. That is, in general. In some lines, conspicuously the building trades, there is much to be done in that respect, and perhaps it never will be done directly, but rather indirectly through changes in methods. As a rule, however, more results are coming from effort than ever before. Men have got over much of the shirking spirit of 1920. They may not be exerting so much personal effort as before the war, but there is the aid of many improvements in appliances and methods. That the net result of this progress should be illustrated in a tendency of prices to decline is not disadvantageous, provided the distribution is right and the changes are not drastic.

A Good Metallurgical Investment

IT has become the fashionable thing to assume a disparaging tone of voice when talking about engineering education as it exists today—especially when the conversation turns to Prof. John Doe or Instructor Richard Roe.

Some of this is due to the elderly belief that things are not so good now as in the days when we were young. More of it is due to the suspicion that the American university has more desire and more money for imposing athletic stadiums than for libraries, laboratories and workshops. The rest comes from the undoubted fact that members of engineering and technical faculties are paid considerably less than men of similar attainments in commercial pursuits.

It is a mistake to conclude, however, that university professors are men of mediocre ability merely because they are getting a mediocre salary. Strange as it may seem, any number of them are sticking to the job because they believe the training of young men is the most important and most worth-while job they could have. One who visits among the engineering colleges is struck by the fact that the faculty is a group of men well skilled in the difficult art of organizing a body of information into such shape as to be digestible by the youthful student. A favorable conclusion is also reached if the college faculties are judged by their graduates. Taken as a whole, they are not so bad. Seldom is a college education regarded as a handicap—even by the sharpest critics of our present educational system.

One criticism is justifiable, and indeed is admitted by college men themselves. Teachers rapidly lose touch with the march of events. Their chief tools are books, and books give the impression that the things they treat are finished, complete, perfect.

The art and science of iron and steel, in its multitudinous ramifications is a living thing, growing with marvelous rapidity. If the chief engineer of the Carnegie Steel Co. were to take a professorship tomorrow and seclude himself from his former associations, he would be out of date in less than ten years.

In fact, too many of the present teachers of metallurgy—and of other branches of engineering—lack an original contact with the commercial and manufacturing aspects of their subject. They enter the teaching profession soon after graduating, and their information is almost exclusively book information. They lack the vivid impressions and intimate knowledge which come from working out a solution to a vexing problem in real production; one that will fit real furnaces, real metal, real workmen, real money.

It is not always remembered that this defect in college professors reacts upon more than the professor himself. Obviously, a lack of perspective and balance in the teacher is reflected in the student, and the loss is ultimately absorbed by the industry itself. The proposition that the industry would profit by better engineering students requires no argument.

Is not the correction of the situation in the hands of industry itself? Why not invite the ambitious instructor into the works? Hardly a department from the mine to the manufacture of thumb tacks but has some problem relating to its machines, its men or its business methods which would bear scrutiny from a disinterested man who has learned to think in the language of industry. Commission some university professor to make this study this coming summer. It will cost only a few hundred dollars. Perhaps the conclusion he reaches can be capitalized into many times that amount. But even if his studies lead to nothing so far as the particular problem is concerned, the instructor will return to his main job with an entirely different picture of the industry with which he is connected. This new and clearer viewpoint will be reflected immediately in the class-room, and eventually the industry as a whole will gain new vigor in the persons of graduate students better prepared for the long job ahead.

This matter is recommended for investment.

CORRESPONDENCE

Increase of Wealth and the Present-Day Scale of Lavish Expenditure

To the Editor: I have read your editorial "Savings and Wealth," in the issue of April 8, and think it is very good. To me this subject is rather complicated. I have never been able to arrive at very clear conclusions.

You say, "Growth of the wealth of the country has been due to savings out of income, invested in things of permanent value." There is a question as to just what is meant by the word "wealth." Political economists have definitions that are sometimes at variance with the commonly accepted meanings of words.

I do not suppose there was much wealth in this country when Christopher Columbus called the first time. But there was just as much coal and iron and oil in the ground, there was just as much fertility in the soil, and there were just the same possibilities of development as at any time afterward. Great wealth was created or developed in mines and soil and natural resources by immigration and the processes of civilization, apparently, without the "savings out of income."

Now, as to savings being "invested in things of permanent value," I am not quite sure the investment is really necessary. It seems that savings deposited in savings banks would be wealth if not invested otherwise.

You say, . . . "if the enterprise produces tangi-

ble returns." This seems to relate to industrial enterprise. But farms may produce tangible returns; mines may also; and other enterprises than those strictly industrial may produce tangible returns.

"Highways are productive but do not yield a measurable return." Highways may not yield much return directly, but they do yield a return in the way of saving time for every one who travels. They yield a return to the farmer by enabling him to market his crop when the prices are good, and they yield a return by increasing the value of the land along the highway.

As to installment buying: There is no doubt that many people will buy more on the installment plan than they would or could buy for cash. When the day of payment is some distance in the future, the hope is cherished that the money will be found in some way by that time.

It is an undeniable fact that a good many people in this town are buying on the installment plan automobiles and radio outfits and other things that could be dispensed with if necessary, and meanwhile standing off the grocer and the butcher and other business men.

There is a great deal of "money" in the country; wages are good in many lines of work, especially in the cities, and the savings banks have larger deposits than ever before. But many people are on the verge of bankruptcy, it is said. A large proportion of the farms in the county just north of here are mortgaged.

The high cost of living is upon us, the standard of living has been raised, the young people demand more money than ever before, and those who do not keep up with the pace are "not in it."

There seems to be plenty of money to keep the income tax up to its usual amount or more. This does not necessarily mean that all the people have money. There is such a thing as a large part of the people handing their money over to those who are more saving or who have such enormous enterprises that a small per cent runs into millions.

Many people in moderate circumstances have automobiles, radio outfits and well furnished houses. Their children are well dressed, they take long motor trips or tours, and the question is often asked, How do they do it? Wages are probably higher now than ever before, work is plentiful, and this makes spending possible. There is doubtless some inflation, as a dollar will not buy what it would a few years ago.

How this will all work out—whether people will tone down their expenditures, or whether there will be a sharp depression and a settling up time some day—remains to be seen. I have not been able to figure it out. Almost everybody says people are spending too much. The flush times may tide them over for a while.

E. L. ARNOTT,
Ever-Ready-Can Co.

Greenfield, Ohio, April 10.

NEW ALLOY STEEL INTEREST

Purchases from Retiring Chairman Langenbach Revive Reports of Merger of Ohio Companies

CLEVELAND, April 20.—The controlling interest in the United Alloy Steel Corporation, Canton, Ohio, has been acquired by Cyrus S. Eaton, of Otis & Co., investment bankers, of Cleveland, and associates, who have purchased a substantial part of the stock of E. A. Langenbach, chairman of the United Alloy board, who announced that he is disposing of his holdings in order that younger men may take charge of the business. He will retire from the chairmanship. Mr. Langenbach, who is 62 years of age, retired from the presidency of the company early this year, being succeeded by George H. Charls, who advanced from the vice-presidency and general managership.

It is understood that approximately $6,000,000 was involved in the transaction. It is stated that for the present at least there will probably be very little change in the executive organization of the company.

The passing of the control of the United company to new hands has caused a revival of rumors of a merger of independent steel companies in Ohio. Names of companies most frequently referred to in the merger talk include the United Alloy corporation, Trumbull Steel Co., Central Steel Co., Otis Steel Co. and the American Rolling Mill Co. Mr. Eaton first became a factor in the steel industry late last year when he and associates refinanced the Trumbull Steel Co., when that company was in financial difficulties, and on its reorganization Eaton became chairman of the board. Previous to that time he had devoted his attention largely to public utilities properties. He is a director of the Ohio Brass Co., Mansfield, Ohio.

Negotiations were under way last fall for a consolidation of the Central Steel Co., Massillon, Ohio, and the United Alloy corporation, but these fell through, it being announced at the time that the failure to effect a merger was due to a slight difference in the terms for the transfer of stock.

In an announcement of the sale of his stock Mr. Langenbach said:

"Recently I have been approached by a group of men, skilled in the steel trade, headed by Mr. Eaton, who desired to acquire the greater part of my interest as a stockholder in the Alloy corporation, with the view of carrying on the industry and materially enlarging it.

"These men are well and favorably known in the financial and steel world. They have youth, experience, abundant capital, broad vision, and an earnest desire to maintain the Alloy Steel corporation among the foremost in the industry. They will find in the present organization of the Alloy corporation some of the best men in the steel trade, who have demonstrated their fitness to continue in the business. The new group will enter the business under the most favorable conditions."

The United Alloy Steel Corporation was organized in 1916, succeeding the United Steel Co. Other companies that were merged with the present company were the United Furnace Co., the Berger Mfg. Co., and the Canton Sheet Steel Co. The company has a well integrated plant including a blast furnace and by-product coke plant. It is one of the leading producers of alloy steels and its other leading products are sheets in various finishes. Its annual ingot capacity is 720,000 tons. It now does a business of about $50,000,000 a year and its annual payroll amounts to about $15,000,000. Its net earnings in 1925 were $3,128,985 after depreciation, interest, Federal taxes, etc.

At the annual meeting of the United Alloy Steel Corporation, Cyrus S. Eaton and J. O. Eaton, of Otis & Co., Cleveland, and Philip Wick, investment banker of Youngstown, were elected directors to represent the new controlling interest. They succeed Edward Langenbach, David B. Day and P. W. Brown. Other directors were re-elected. Owing to absence of members of the board the election of officers was postponed until later in the week. Mr. Wick is a director of the Trumbull Steel Co. and was temporarily president of that company during its period of refinancing.

Bethlehem Steel Corporation Establishes Relief Department

The Bethlehem Steel Corporation has established a Relief Department for the benefit of employees, according to announcement made by President Eugene G. Grace, at the annual meeting of the employees' representatives. The formation of this department is to bring under one management employees' beneficial associations now existing at different plants of the company's subsidiaries, and also to provide uniform benefits to all employees and their families in case of sickness or death.

In addition to the support which the corporation will give to the plan, employees will make contributions to it. The administration of the plan will be largely in the hands of representatives of the employees. The plan will become effective June 1.

Iron and Steel Markets

Late Season Affects Steel Trade

Steel Corporation's New Bookings at 55 Per Cent of Capacity—Pending Structural Projects Give Better Promise —Countervailing Duty on Indian Pig Iron

WHAT the Steel Corporation's officers reported to its stockholders at the annual meeting on Monday fairly represents April developments throughout the industry. At 28,500 tons a day, the corporation's new bookings are about 55 per cent of its capacity. Shipments meanwhile, reported at 48,140 tons a day, are at 93 per cent of capacity, while production is at a slightly higher rate than shipments.

In speaking of the backwardness of the season Chairman Gary touched on one retarding influence of recent weeks which may find its compensation later in increased orders. Wire products have felt the postponement of farmer demand; merchant pipe has been affected by the lateness of the building season; the tin plate movement depends in part on the clearing up of the prospect for canning crops; and pending more rapid moving of dealers' stocks motor car output is at less than the rate of March.

Apart from the automobile industry, the operation of plants which consume steel remains close to the rate of March, and thus the steel trade expects that as the season advances the average of rolling mill schedules will be close to that of April.

In the Chicago district the steel requirements of several pending projects are emphasized, as against some decline in current orders. The Agricultural Mart at Chicago will take 70,000 tons of plates, shapes and bars, apart from 7000 tons of reinforcing steel. For the Northern Indiana refinery of the Roxana Petroleum Corporation 36,000 tons of steel, largely plates, may be placed in another week, and 85 oil tanks for the Union Oil Co., Los Angeles, will take 23,000 tons.

In other directions structural business is appearing in larger volume than in early April, including 8000 tons for a hotel at Pittsburgh. A viaduct near Key West calls for 11,000 tons of bars.

Apart from the Atlantic Coast Line's inquiry for 1000 gondola cars and the purchase of 25 locomotives for the Lackawanna, the equipment market shows little. Up to April 20, freight cars placed were 32,000, or more than the total for the first six months of 1925.

Reports still agree as to the smallness of rolled steel stocks in the hands of manufacturing consumers, but there is not the same assurance that the latter have moved their own product as fast as made up. Another month will bring more light on this phase of the situation.

Some sheet mills have taken orders in April at the expense of prices. The concessions have been more conspicuous in connection with automobile stock, and 4.30c. is commonly done on body sheets Black sheets have shown further weakness. Several mills in Ohio and the Chicago district have curtailed output.

These developments in the sheet market have brought renewed efforts by some mills to secure concessions on sheet bars. Prices have been maintained, however, apart from the offer by one mill of Bessemer sheet bars, for immediate specification, at $35, as against the contract basis of $36.

Records of independent sheet makers for the first quarter show a relation between shipments and output that would suggest stiffening rather than weakening prices. The three months' production was 947,328 tons and the shipments 944,134 tons. Also sales in March were over two-thirds greater than in February—304,233 tons against 181,101 tons.

Cold rolled strip steel has declined further to 3.50c., Cleveland and Pittsburgh, and one large Detroit contract brought out a still lower price.

Few pig iron consumers are needing to buy for early delivery and the recent decline in prices has led to little new business. The leading maker of cast iron pipe is apparently still in the market.

In the Eastern market the Treasury Department has made a stir by deciding to impose a countervailing duty on imports of pig iron from the furnaces of the Tata Iron & Steel Co. in India. This action is based on the fact that the Indian Government pays a bounty on 70 per cent of the Tata company's steel output. The amount of the added duty is not yet determined but may be $3, or enough to check, if not stop, imports from India. Other foreign irons, however, could come in in larger volume.

Meanwhile Eastern pig iron producers are making fresh efforts at Washington to get an order increasing the 75-cent pig iron tariff by 50 per cent.

THE IRON AGE pig iron composite price has stood at $20.46 for another week, being $1.08 below that of Jan. 1. The course has been slowly downward since the middle of February.

Finished steel remains at 2.439c. per lb. for the fourth week. This figure is midway between the year's high of 2.453c., early in January, and the low of 2.424c., prevailing in February.

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics
At Date, One Week, One Month, and One Year Previous

For Early Delivery

Pig Iron, Per Gross Ton:	Apr. 20, 1926	Apr. 13, 1926	Mar. 23, 1926	Apr. 21, 1925
No. 2X, Philadelphia‡	$23.26	$23.26	$23.26	$22.51
No. 2, Valley furnace†	19.00	19.00	20.50	20.00
No. 2, Southern, Cin'ti†	25.69	25.69	25.69	24.05
No. 2, Birmingham, Ala.†	22.00	22.00	22.00	20.00
No. 2 foundry, Chicago*	22.00	22.00	23.00	22.00
Basic, del'd, eastern Pa.	21.75	21.75	21.75	22.75
Basic, Valley furnace	18.50	18.50	20.00	20.00
Valley Bessemer del'd P'gh	21.26	21.26	22.76	22.76
Malleable, Chicago*	22.00	22.00	23.00	22.00
Malleable, Valley	19.00	19.00	20.50	20.50
Gray forge, Pittsburgh	20.26	20.26	21.76	21.26
L. S. charcoal, Chicago	29.04	29.04	29.04	29.04
Ferromanganese, furnace	88.00	88.00	90.00	115.00
Rails, Billets, etc., Per Gross Ton:				
O.-h. rails, heavy, at mill	$43.00	$43.00	$43.00	$43.00
Light rails at mill	34.00	34.00	35.00	39.20
Bess. billets, Pittsburgh	35.00	35.00	35.00	35.50
O.-h. billets, Pittsburgh	35.00	35.00	35.00	35.50
O.-h. sheet bars, P'gh	36.00	36.00	36.00	37.00
Forging billets, base, P'gh	40.00	40.00	40.00	40.50
O.-h. billets, Phila	40.30	40.30	40.30	41.17
Wire rods, Pittsburgh	45.00	45.00	45.00	46.00
	Cents	Cents	Cents	Cents
Skelp, gr. steel, P'gh, lb.	1.90	1.90	1.90	2.00
Finished Iron and Steel,				
Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Iron bars, Philadelphia	2.22	2.22	2.22	2.22
Iron bars, Chicago	2.00	2.00	2.00	2.10
Steel bars, Pittsburgh	2.00	2.00	2.00	2.00
Steel bars, Chicago	2.10	2.10	2.10	2.10
Steel bars, New York	2.34	2.34	2.34	2.34
Tank plates, Pittsburgh	1.90	1.90	1.85	2.00
Tank plates, Chicago	2.10	2.10	2.10	2.20
Tank plates, New York	2.24	2.24	2.14	2.34
Beams, Pittsburgh	1.90	1.90	1.90	2.00
Beams, Chicago	2.10	2.10	2.10	2.20
Beams, New York	2.24	2.24	2.24	2.34
Steel hoops, Pittsburgh	2.50	2.50	2.50	2.40

*The average switching charge for delivery to foundries in the Chicago district is 61c. per ton.
†Silicon, 1.75 to 2.25. ‡Silicon, 2.25 to 2.75.

Sheets, Nails and Wire,	Apr. 20, 1926	Apr. 13, 1926	Mar. 23, 1926	Apr. 21, 1925
Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Sheets, black, No. 28, P'gh	3.25	3.25	3.25	3.30
Sheets, black, No. 28, Chicago dist. mill	3.45	3.45	3.45	3.50
Sheets, galv., No. 28, P'gh	4.50	4.50	4.50	4.50
Sheets, galv., No. 28, Chicago dist. mill	4.70	4.70	4.70	4.70
Sheets, blue, 9 & 10, P'gh	2.40	2.40	2.50	2.50
Sheets, blue, 9 & 10, Chicago dist. mill	2.60	2.60	2.60	2.60
Wire nails, Pittsburgh	2.65	2.65	2.65	2.75
Wire nails, Chicago dist. mill	2.70	2.70	2.70	2.85
Plain wire, Pittsburgh	2.50	2.50	2.50	2.50
Plain wire, Chicago dist. mill	2.55	2.55	2.55	2.60
Barbed wire, galv., P'gh	3.35	3.35	3.35	3.45
Barbed wire, galv., Chicago dist. mill	3.40	3.40	3.40	3.55
Tin plate, 100-lb. box, P'gh	$5.50	$5.50	$5.50	$5.50
Old Material, Per Gross Ton:				
Carwheels, Chicago	$16.50	$16.50	$17.00	$16.00
Carwheels, Philadelphia	17.50	17.50	17.50	17.50
Heavy steel scrap, P'gh	*16.50*	17.00	17.50	17.00
Heavy steel scrap, Phila	16.00	16.00	16.50	14.50
Heavy steel scrap, Ch'go	*13.00*	13.50	14.00	14.75
No. 1 cast, Pittsburgh	16.50	16.50	17.00	17.50
No. 1 cast, Philadelphia	17.50	17.50	17.50	17.00
No. 1 cast, Ch'go (net ton)	*16.25*	16.50	17.00	17.50
No. 1 RR. wrot., Phila	17.50	17.50	17.00	17.50
No. 1 RR. wrot, Ch'go (net)	*12.25*	12.75	13.00	13.00
Coke, Connellsville,				
Per Net Ton at Oven:				
Furnace coke, prompt	$3.00	$3.00	$3.00	$3.00
Foundry coke, prompt	4.00	4.00	4.25	4.00
Metals,				
Per Lb. to Large Buyers:	Cents	Cents	Cents	Cents
Lake copper, New York	**14.12½**	14.00	14.25	13.37½
Electrolytic copper, refinery	**13.75**	13.62½	13.87½	13.12½
Zinc, St. Louis	*6.95*	7.15	7.42½	6.80
Zinc, New York	*7.80*	7.50	7.77½	7.15
Lead, St. Louis	*7.50*	7.65	8.10	7.40
Lead, New York	*7.85*	8.00	8.37½	7.75
Tin (Straits), New York	*62.50*	63.75	65.00	52.50
Antimony (Asiatic), N. Y.	**17.50**	17.25	20.50	11.87½

On export business there are frequent variations from the above prices. Also, in domestic business, there is at times a range of prices on various products, as shown in our market reports on other pages.

Pittsburgh

Curtailed Buying, But Price Stability Save in Two or Three Lines

PITTSBURGH, April 20.—What Judge Gary told the stockholders of the United States Steel Corporation at the annual meeting yesterday as to the Corporation's present activities is commonly regarded as a good picture of the steel industry at large. Strictly new business has shown a further loss as compared with the March rate, and with shipments still running well ahead of incoming orders, steel plant operations continue to work down.

Ingot production in this and nearby districts now may be safely appraised at 75 per cent of capacity, this due to a farther decline in Youngstown, where the Carnegie Steel Co. has found it necessary to curtail. In Pittsburgh proper and in Johnstown and the Wheeling district, the loss of a production has been comparatively slight, and the Carnegie Steel Co. actually has one more blast furnace in production than a week ago. That company has taken off one of its Lucy furnaces, which has been making ferromanganese, but has put on one furnace at Duquesne, and this morning started up H furnace of its Edgar Thomson group. The company now has 42 of its 51 furnaces in production, and with No. 1 furnace of the Shenango Furnace Co. again in production, the territory bounded by Johnstown, Erie, Dover, Ohio, and Wheeling has 96 out of 127 furnaces going.

The industry has produced a very large amount of steel so far this year, and also has shipped heavily, and it is believed that primary consumption has not been materially behind the output. There is not much doubt, however, that the manufacturing consumers of steel have not moved their own product into consumption with the same speed that steel makers have, and this probably explains the quieter market.

Automobile manufacturers generally have made more cars than they have actually sold, and outside of a few of them, present requirements of steel are well below those of the first few months of the year. There are no rail tonnages of consequence to take the place of completed orders, and while there has been a gain in the use of steel for tubular goods, notably for oil wells and pipe lines, it is doubtful if it counterbalances the loss of tonnage in other directions. The common report about the farmers is that they have not been buying with any considerable freedom, and structural steel activities appear better in a prospective than in an actual way.

No sizable stocks of steel appear to be held by consumers, but it is believed that with the steelmakers reserves of semi-finished material are fairly heavy. Matching the Steel Corporation's ingot production against its finishing mill operations leads to this belief. In view of the short term buying, and the insistence of buyers for very prompt deliveries of orders, it would seem that a policy of building up mill stocks was a wise one. Steel laid down during the period of high productive activity means steel at a low cost, and the savings probably more than offset carrying charges and the expense of frequent scheduling.

The industry has experienced several years of short range buying but has yet to adjust itself fully to that sort of a demand, even though all indications are that for the next few years at least, there can be no decided change. Sales effort still is of an intensive sort; ex-

cepting sheets and cold rolled strips, the need of business as yet has not been so pressing as to bring about any real price weaknesses.

Pig Iron.—Consumers do not seem to need iron and the recent break in prices has not created business. Scrap prices still are headed downward. Coke and coal are plenty and easy. The past week has offered fresh evidence that the dullness in the first quarter of the year was due to the fact that melters were well supplied with iron and not that they were waiting for prices to come down. Actually the decline in prices seems to have disturbed considerably the secondary market, notably in castings. With business checked because buyers look for prices of castings to reflect the decline in pig iron, the melt has fallen and the demand for iron has decreased. A Pittsburgh district sheet maker within the week inquired for 5000 tons of basic iron and later decided, because of developments in the sheet market, to defer the purchase and raise the ratio of scrap in the open-hearth mix. Two Johnstown radiator companies closed for a total of 6000 tons of foundry iron, the business going to the local steel maker at a delivered price of $21.50 for No. 2 grade, which would figure back to $19, Valley furnace. One of these companies also took a round lot of foundry iron for a plant at New Castle, Pa., at $19, Valley furnace, for No. 2 grade. Sales otherwise have been of small lots and evidence of broad interest in the market on the part of consumers still is lacking. Prices of a week ago are holding.

We quote Valley furnace, the freight rate for delivery to the Cleveland or Pittsburgh district being $1.76 per gross ton:

Basic	$18.50
Bessemer	$19.50 to 20.00
Gray forge	18.50
No. 2 foundry	19.00
No. 3 foundry	18.50
Malleable	19.00 to 19.50
Low phosphorus, copper free	27.50 to 28.00

Ferroalloys.—Business in the principal ferroalloys is merely a matter of specifications against contracts, and contract prices are the only quotations that mean anything. There are few if any users of ferromanganese that are not under contract for the remainder of the year, and the same situation exists as to 50 per cent ferrosilicon, while consumers of spiegeleisen are covered at least to July 1. Specifications are being made steadily. Prices are given on page 1159.

Semi-Finished Steel.—Interest in the market on the part of users of billets, slabs and sheet bars is low. Most of them still have some tonnage against first quarter contracts, and some took enough steel in that period to be able to get along without fresh purchases. The first quarter prices of $35, Pittsburgh or Youngstown, for large billets and slabs, and $36 for sheet bars and small billets and slabs, are still quoted, but there has been no real test of them. Strictly second quarter business is lighter to the extent of the unspecified first quarter tonnages and the excess of receipts over actual consumption in that period. We note a sale of 1000 tons of skelp at 1.90c., Pittsburgh, but generally open market activity in this product is light. Wire products are not moving with enough snap to bring out rod specifications very freely, but bolt, nut and rivet makers are taking tonnage steadily. Prices are given on page 1159.

Wire Products.—Business is rather disappointing to the makers in this district, who expected that consumption would be heavy by this time and that in view of light stocks in second hands there would be a lively demand upon them. Weather conditions have been against good consumption, and jobbers are restricting purchases to actual needs, because they are satisfied they can get supplies when they are wanted and that the possibility of higher prices is remote. Efforts to weaken the market are not successful, because it seems that present prices show only a slim profit and costs are increased by the character of specifications, which necessitates fairly sizable mill stocks if the delivery requirements are to be met. Prices are given on page 1157.

Rails and Track Supplies.—Small spikes are weak, with some makers now going as low as $2.85 base per 100 lb. for orders. In keeping with a light operation of coal mines in this and nearby districts, light rails are in very limited demand and the same is true of the spikes used for fastening them. There seems to be no weakening in prices of standard spikes or of tie plates, although both orders and specifications lately have been light. Prices are given on page 1157.

Tubular Goods.—The backward spring has retarded construction work and kept down the demand for butt-weld sizes of pipe. There is a fairly good operation of buttweld pipe furnaces, but some of the production is going into mill warehouses. The best operation is in the lapweld mills, since there is a very steady demand for oil country pipe, while no small amount of line pipe is filtering in and a good many sizable orders are believed to be close to the letting stage. One Pittsburgh maker, who shared the recent order of the Standard Oil Co. of New Jersey for 22-in. pipe, will be busy for the next four months on its large-diameter mills. There is engagement of about 75 per cent of the steel pipe capacity in the Greater Pittsburgh area. Prices appear to be holding well, although real strength is lacking in the secondary markets. Boiler tube prices are no lower, but most makers regard them as too low already. There is a fairly good business in seamless tubes, but there is room for improvement in welded tubes. Discounts are given on page 1157.

Sheets.—Business seems to be holding at the recent average, but orders have been taken at the expense of prices. It is contended here that the concessions from the so-called regular market prices are no greater than they have been, but are being made by a greater number of makers than was true recently. It is not hard to buy black sheets at 3.25c., base Pittsburgh, and as low as 3.15c. is reported on tin mill sizes of light gage for some styles of barrels. There is a little more pressure against black sheets than against blue annealed or galvanized sheets. The price of 4.40c. on automobile body sheets appears to have passed, as almost all makers named 4.30c. against one good-sized piece of business that was up in Detroit last week.

THE IRON AGE Composite Prices

Finished Steel

April 20, 1926, 2.439c. Per Lb.

One week ago	2.439c.
One month ago	2.431c.
One year ago	2.474c.
10-year pre-war average	1.689c.

Based on prices of steel bars, beams, tank plates, plain wire, open-hearth rails, black pipe and black sheets. These products constitute 88 per cent of the United States output of finished steel.

	High		Low	
1926	2.453c.,	Jan. 5;	2.424c.,	Feb. 9
1925	2.560c.,	Jan. 6;	2.396c.,	Aug. 18
1924	2.789c.,	Jan. 15;	2.460c.,	Oct. 14
1923	2.824c.,	April 24;	2.446c.,	Jan. 2

Pig Iron

April 20, 1926, $20.46 Per Gross Ton

One week ago	$20.46
One month ago	21.38
One year ago	20.75
10-year pre-war average	15.72

Based on average of basic and foundry irons, the basic being Valley quotations, the foundry an average of Chicago, Philadelphia and Birmingham.

	High		Low	
1926	$21.54,	Jan. 5;	$20.46,	April 13
1925	22.50,	Jan. 13;	18.96,	July 7
1924	22.88,	Feb. 26;	19.21,	Nov. 3
1923	30.86,	March 20;	20.77,	Nov. 20

Mill Prices of Finished Iron and Steel Products

Iron and Steel Bars

Soft Steel

	Base Per Lb.
F.o.b. Pittsburgh mills	2.00c.
F.o.b. Chicago	2.10c.
Del'd Philadelphia	2.32c.
Del'd New York	2.34c. to 2.44c.
Del'd Cleveland	2.19c.
F.o.b. Birmingham	2.15c. to 2.25c.
C.i.f. Pacific ports	2.35c.
F.o.b. San Francisco mills	2.35c. to 2.40c.

Billet Steel Reinforcing

F.o.b. Pittsburgh mills	2.00c.

Rail Steel

F.o.b. mill	1.80c. to 1.90c.
F.o.b. Chicago	2.00c.

Iron

Common iron, f.o.b. Chicago	2.00c.
Refined iron, f.o.b. P'gh mills	3.00c.
Common iron, del'd Philadelphia	2.22c.
Common iron, del'd New York	2.24c.

Tank Plates

	Base Per Lb.
F.o.b. Pittsburgh mill	1.90c.
F.o.b. Chicago	2.10c.
F.o.b. Birmingham	2.05c. to 2.15c.
Del'd Cleveland	2.09c.
Del'd Philadelphia	2.22c.
Del'd New York	2.24c.
C.i.f. Pacific ports	2.25c. to 2.30c.

Structural Shapes

	Base Per Lb.
F.o.b. Pittsburgh mill	1.90c. to 2.00c.
F.o.b. Chicago	2.10c.
F.o.b. Birmingham	2.05c. to 2.15c.
Del'd Cleveland	2.09c. to 2.19c.
Del'd Philadelphia	2.12c. to 2.22c.
Del'd New York	2.24c. to 2.34c.
C.i.f. Pacific ports	2.25c.

Hot-Rolled Flats (Hoops, Bands and Strips)

	Base Per Lb.
All gages, narrower than 6 in., P'gh	2.50c.
All gages, 6 in. and wider, P'gh	2.30c.
All gages, 6 in. and narrower, Chicago	2.60c.
All gages, wider than 6 in., Chicago	2.50c.

Cold-Finished Steel

	Base Per Lb.
Bars, f.o.b. Pittsburgh mills	2.50c.
Bars, f.o.b. Chicago	2.50c.
Bars, Cleveland	2.55c.
Shafting, ground, f.o.b. mill	*2.70c. to 3.00c.
Strips, f.o.b. Pittsburgh mills	3.75c. to 3.90c.
Strips, f.o.b. Cleveland mills	3.50c. to 3.75c.
Strips, delivered Chicago	4.20c.
Strips, f.o.b. Worcester mills	4.05c.

*According to size.

Wire Products

(To jobbers in car lots f.o.b. Pittsburgh and Cleveland)

	Base Per Keg
Wire nails	$2.65
Galv'd nails, 1-in. and longer	4.65
Galv'd nails, shorter than 1 in.	4.90
Galvanized staples	3.35
Polished staples	3.10
Cement coated nails	2.65

	Base Per 100 Lb.
Bright plain wire, No. 9 gage	$2.50
Annealed fence wire	2.65
Spring wire	3.50
Galv'd wire, No. 9	3.10
Barbed wire, galv'd	3.25
Barbed wire, painted	3.10

Chicago district mill and delivered Chicago prices are $1 per ton above the foregong. Birmingham mill prices $3 a ton higher; Worcester, Mass., mill $3 a ton higher on production of that plant; Duluth, Minn., mill $2 a ton higher; Anderson, Ind., $1 higher.

Woven Wire Fence

	Base to Retailers Per Net Ton
F.o.b. Pittsburgh	$65.00
F.o.b. Cleveland	65.00
F.o.b. Anderson, Ind.	66.00
F.o.b. Chicago district mills	67.00
F.o.b. Duluth	68.00
F.o.b. Birmingham	68.00

Sheets

Blue Annealed

	Base Per Lb.
Nos. 9 and 10, f.o.b. Pittsburgh	2.40c. to 2.50c.
Nos. 9 and 10, f.o.b. Ch'go dist. mills	2.60c.
Nos. 9 and 10, del'd Phila'phia	2.82c.

Box Annealed, One Pass Cold Rolled

No. 28, f.o.b. Pittsburgh	3.20c. to 3.35c.
No. 28, f.o.b. Ch'go dist. mill	3.45c.
No. 28, del'd Phila'phia	3.67c.

Galvanized

No. 28, f.o.b. Pittsburgh	4.50c. to 4.60c.
No. 28, f.o.b. Chicago dist. mill	4.70c.
No. 28, del'd Philadelphia	4.92c.

Tin Mill Black Plate

No. 28, f.o.b. Pittsburgh	3.25c. to 3.35c.
No. 28, f.o.b. Chicago dist. mill	3.45c.

Automobile Body Sheets

No. 22, f.o.b. Pittsburgh	4.30c. to 4.40c.

Long Ternes

No. 28, 8-lb. coating, f.o.b. mill	4.85c.

Tin Plate

	Per Base Box
Standard cokes, f.o.b. P'gh district mills	$5.50
Standard cokes, f.o.b. Gary and Elwood, Ind.	5.60

Terne Plate

(*F.o.b. Morgantown or Pittsburgh*)
(Per package, 20 x 28 in.)

8-lb. coating, 100 lb. base	$11.40
8-lb. coating I.C.	11.70
15-lb. coating I.C.	14.85
20-lb. coating I.C.	$16.20
25-lb. coating I.C.	17.90
30-lb. coating I.C.	19.45
40-lb. coating I.C.	21.65

Alloy Steel Bars

(F.o.b. Pittsburgh or Chicago)

S. A. E. Series Numbers		Base Per 100 Lb.
2100*	(1¼% Nickel, 0.10% to 0.20% Carbon)	$3.20 to $3.25
2300	(3½% Nickel)	4.50
2500	(5% Nickel)	5.70 to 5.80
3100	(Nickel Chromium)	3.50
3200	(Nickel Chromium)	5.00 to 5.25
3300	(Nickel Chromium)	7.00 to 7.25
3400	(Nickel Chromium)	6.25 to 6.50
5100	(Chromium Steel)	3.40 to 3.50
5200*	(Chromium Steel)	7.00 to 7.50
6100	(Chrom. Vanadium bars)	4.30 to 4.40
6100	(Chrom. Vanad. spring steel)	3.80
9250*	(Silicon Manganese spring steel)	3.20 to 3.25
Carbon Vanadium (0.45% to 0.55% Carbon, 0.15% Vanad.)		4.10 to 4.20
Nickel Chrome Vanadium (0.60 Nickel, 0.50 Chrom., 0.15 Vanad.)		4.30 to 4.40
Chromium Molybdenum bars (0.80—1.10 Chrom., 0.25—0.40 Molyb.)		4.25 to 4.35
Chromium Molybdenum bars (0.50—0.70 Chrom., 0.15—0.25 Molyb.)		3.40 to 3.50
Chromium Molybdenum spring steel (1 — 1.25 Chrom., 0.30 — 0.50 Molybdenum)		4.50 to 4.75

Above prices are for hot-rolled steel bars, forging quality. The ordinary differential for cold-drawn bars is 1c. per lb. higher. For billets 4 x 4 to 10 x 10 in. the price for a gross ton is the net price for bars of the same analysis. For billets under 4 x 4 in. down to and including 2½-in. squares, the price is $5 a gross ton above the 4 x 4 billet price.

*Not S. A. E. specifications, but numbered by manufacturers to conform to S. A. E. system.

Rails

	Per Gross Ton
Standard, f.o.b. mill	$42.00
Light (from billets), f.o.b. mill	$34.00 to $35.00
Light (from rail steel), f.o.b. mill	33.00 to 34.00
Light (from billets), f.o.b. Ch'go mill	36.00 to 38.00

Track Equipment

(F.o.b. Mill)

	Base Per 100 Lb.
Spikes, ⅜ in. and larger	$2.80 to $3.10
Spikes, ½ in. and smaller	2.85 to 3.40
Spikes, boat and barge	3.25
Track bolts, all sizes	4.00 to 4.50
Tie plates, steel	2.25 to 2.35
Angle bars	2.75

Welded Pipe

Base Discounts, f.o.b. Pittsburgh District and Lorain, Ohio, Mills

Butt Weld

Steel Inches	Steel Black	Steel Galv.	Iron Inches	Iron Black	Iron Galv.
⅛	45	19½	⅛ to ⅜	+11	+39
¼ to ⅜	51	25½	½	22	2
½	56	42½	¾	28	11
¾	60	48½	1 to 1½	30	12
1 to 3	62	50½			

Lap Weld

2	55	43½	2	23	7
2½ to 6	59	47½	2½	26	11
7 and 8	56	43½	3 to 6	28	13
9 and 10	54	41½	7 to 12	26	11
11 and 12	53	40½			

Butt Weld, extra strong, plain ends

⅛	41	24½	⅛ to ⅜	+19	+54
¼ to ⅜	47	30½	½	21	7
½	53	42½	¾	28	13
¾	58	47½	1 to 1½	30	14
1 to 1½	60	49½			
2 to 3	61	50½			

Lap Weld, extra strong, plain ends

2	53	42½	2	23	9
2½ to 4	57	46½	2½ to 4	29	15
4½ to 6	56	45½	4½ to 6	28	14
7 to 8	52	39½	7 to 8	21	7
9 and 10	45	32½	9 to 12	16	2
11 and 12	44	31½			

To the large jobbing trade the above discounts on steel pipe are increased on black by one point, with supplementary discount of 5%, and on galvanized by 1½ points, with supplementary discount of 5%. On iron pipe, both black and galvanized, the above discounts are increased to large jobbers by one point with supplementary discounts of 5 and 2½%.

Note.—Chicago district mills have a base two points less than the above discounts. Chicago delivered base is 2½ points less. Freight is figured from Pittsburgh, Lorain, Ohio, and Chicago district mills, the billing being from the point producing the lowest price to destination.

Boiler Tubes

Base Discounts, f.o.b. Pittsburgh

Lap Welded Steel		Charcoal Iron	
2 to 2¼ in.	27	1½ in.	+18
2½ to 2¾ in.	37	1¾ to 1⅞ in.	+ 8
3 in.	40	2 to 2¼ in.	— 2
3¼ to 3¾ in.	42½	2½ to 3 in.	— 7
4 to 13 in.	46	3¼ to 4½ in.	— 9

Beyond the above discounts, 5 to 7 fives extra are given on lap welded steel tubes and 2 tens to 2 tens and 1 five on charcoal iron tubes.

Standard Commercial Seamless Boiler Tubes

Cold Drawn

1 in.	60	3 in.	48
1¼ to 1½ in.	52	3½ to 3½ in.	47
1¾ in.	36	4 in.	50
2 to 2¼ in.	31	4½, 5 and 6 in.	45
2½ to 2¾ in.	39		

Hot Rolled

2 and 2¼ in.	34	3¼ and 3½ in.	50
2½ and 2¾ in.	42	4 in.	53
3 in.	48	4½, 5 and 6 in.	48

Less carloads, 4 points less. Add $3 per net ton for more than four gages heavier than standard. No extra for lengths up to and including 24 ft. Sizes smaller than 1 in. and lighter than standard gage to be held at mechanical tube list and discount. Intermediate sizes and gages not listed take price of next larger outside diameter and heavier gage.

Seamless Mechanical Tubing

	Per Cent Off List
Carbon, 0.10% to 0.30%, base	55
Carbon, 0.30% to 0.40%, base	50

Plus differentials for lengths over 18 ft. and for commercially exact lengths. Warehouse discounts on small lots are less than the above.

Buying is at extremely short range in all finishes, and the difficulty in maintaining mill schedules is the primary reason for the market's weakness. Prices are given on page 1157.

Tin Plate.—Continued unseasonable weather over a considerable portion of the country still clouds the outlook for this year's packing crop and, in turn, is responsible for a more conservative note in tin plate. Container manufacturers are taking all the tin plate contracted for, but are not exercising the options on additional coverage. Mill operations are high and will hold up through this quarter, but weather conditions will have much to do with operations beyond June 30.

Cold-Finished Steel Bars and Shafting.—From a price angle the market is very satisfactory, as there are no important deviations from 2.50c., base Pittsburgh, for ordinary tonnages. Aggregate business is reasonably satisfactory, but it consists entirely of small lots for quick shipment and makes frequent scheduling of mills necessary. Moreover, in filling orders, manufacturers have to adapt themselves to warehouse methods.

Bolts, Nuts and Rivets.—Bolt and nut prices continue to hold well and business is still reported as satisfactory, although it is not sufficient to engage as much as 75 per cent of the country's productive capacity. There is still much irregularity in large rivet prices, and large lots for early delivery are selling well below the regular contract price. Discounts and prices are given on page 1159.

Steel and Iron Bars.—The merchant steel bar price here still is 2c., base Pittsburgh, on the general run of ordinary tonnages. There is still some talk of a higher price on mixed carloads, that is those running to a multiplicity of sizes, but as a general rule 2c. is the representative figure. Few mills are booked very far ahead and very early delivery is promised on all orders. Iron bars are steady but not particularly active. Prices are given on page 1157.

Structural Steel.—A good deal of structural steel is in sight, local shops noting fully 30,000 tons in projects that are regarded as certain to go through, but details of financing are holding up formal placing of general contracts and of course the inquiries for the steel. There is no change in plain material with 1.90c., base, Pittsburgh, the ruling price on all except very small tonnages.

Plates.—Mills here still are very firm at 1.90c., base, Pittsburgh, despite some rather strong efforts on the part of buyers to secure supplies at less. Considerable plate tonnage is in sight for river barges and for large outside diameter pipe, but generally both actual and prospective business is not so great as to give the market much firmness and that condition rules largely because makers are not disposed to sell at prices that do not yield a profit.

Hot-Rolled Strips.—There is a persistent demand for hoops, bands and strips, with buyers calling for small lots frequently and then demanding early delivery. No deviations from quotations are noted. Prices are given on page 1157.

Cold-Rolled Strips.—Automobile builders are less urgent in their demands and prices are weaker to the extent that more makers are going to 3.75c., base, Pittsburgh or Cleveland, than was the case a week ago. Usually, however, sales at that figure are to large buyers and 3.90c., base, still is quoted on small lots and there have been no revisions of contracts carrying the latter prices. On cold rolled strips for automobile fenders, there has been a drop of $2 per ton in keeping with the recent similar decline in the price of automobile body sheets. The new quotations are 5.30c. for No. 22 gage and 5.25c. for No. 20 gage.

Coke and Coal.—Coke prices are rather more favorable to buyers than they were a week ago, with spot furnace coke now easily obtainable at $3 per net ton at ovens with no sales at a higher price, and with good brands of spot foundry coke selling at $4 to $4.50. Furnaces in blast are all covered by contracts and the small producers without regular consuming connections find it hard to find an outlet for production. Even the unseasonably cold weather has failed to tax seriously the supply of coal and prices have continued at or near buyers' valuation.

Old Material.—Mills reported in the market a week ago for round lots of the steel works grades succeeded in covering their requirements at their bids of $16.50 and $17 for heavy melting steel. Accordingly that is the quotable range on the grade. One of the buyers also bought compressed sheets at $15.50 and bundled sheets at $14.50, but the only demand for these grades at present is from dealers, and they are not willing to pay more than $14 and $15 respectively. There is very little interest in other grades, which if they have a definite price tendency, it is toward weakness.

We quote for delivery to consumer's mill in the Pittsburgh and other districts taking the Pittsburgh freight rate as follows:

Per Gross Ton	
Heavy melting steel	$16.50 to $17.00
No. 1 cast, cupola size	16.50 to 17.00
Rails for rolling, Newark and Cambridge, Ohio; Cumberland, Md.; Huntington, W. Va., and Franklin, Pa.	18.00 to 18.50
Compressed sheet steel	15.00 to 15.50
Bundled sheets, sides and ends	14.00 to 14.50
Railroad knuckles and couplers	18.50 to 19.00
Railroad coil and leaf springs	18.50 to 19.00
Low phosphorus blooms and billet ends	21.00 to 21.50
Low phosphorus plates and other material	19.00 to 19.50
Low phosphorus punchings	19.00 to 19.50
Steel car axles	22.00 to 22.50
Cast iron wheels	17.00 to 17.50
Rolled steel wheels	18.50 to 19.00
Machine shop turnings	12.00 to 12.50
Short shoveling turnings	12.50 to 13.00
Sheet bar crops	18.50 to 19.00
Heavy steel axle turnings	15.00 to 15.50
Short mixed borings and turnings	12.50 to 13.00
Heavy breakable cast	15.00 to 15.50
Cast iron borings	12.50 to 13.00
No. 1 railroad wrought	12.00 to 12.50
No. 2 railroad wrought	16.50 to 17.00
Malleable scrap	17.00 to 17.50

Warehouse Prices, f.o.b. Pittsburgh

	Base per Lb.
Tank plates	3.90c.
Structural shapes	3.90c.
Soft steel bars and small shapes	2.90c.
Reinforcing steel bars	2.90c.
Black sheets (No. 28 gage)	4.35c.
Galvanized sheets (No. 28 gage)	5.60c.
Blue annealed sheets (No. 10 gage)	3.50c.
Cold-finished shafting and screw stock—	
Rounds and hexagons	3.60c.
Squares and flats	4.10c.
Bands	3.60c.
Spikes, large	3.30c.
Small	3.80c. to 5.25c.
Boat	3.80c.
Bolts, track	4.90c.
Wire, black soft annealed, base per 100 lb.	$3.00
Wire, galvanized soft, base per 100 lb.	3.00
Common wire nails, per keg	3.00
Cement coated nails	3.05

First Quarter Earnings of Sheet & Tube Co.

YOUNGSTOWN, April 20.—From first quarter earnings, the Youngstown Sheet & Tube Co. added $2,568,012.06 to surplus, the statement issued this week reveals. Net profits for the quarter applicable to dividends of $3,804,837.31 are equivalent to $3.65 per share of common stock.

Net earnings from operations after deducting all expenses of the business and after deducting charges for repairs and maintenance of plants are $7,448,416.02. Other income, including interest received, dividends from investments and miscellaneous income, bring the total to $8,177,528.40. During the quarter $1,236,825.25 was paid in dividends.

Steel Tank Work in March Up to February Level

WASHINGTON, April 20.—Based on reports received from 36 firms, bookings of fabricated steel plate in March totaled 29,004 tons, or 43 per cent of capacity, according to the Department of Commerce. This compares with 44 per cent of capacity in February and 33 per cent in March, 1925. Bookings during March of the present year were distributed as follows: Storage tanks, 5773 tons; refinery materials and equipment, 3873 tons; tank cars, 1551 tons; gas holders, 5048 tons; blast furnaces, 377 tons; stacks and miscellaneous, 12,382 tons.

Semi-Finished Steel, Raw Materials, Bolts and Rivets

Mill Prices of Semi-Finished Steel

F.o.b. Pittsburgh or Youngstown

Billets and Blooms

	Per Gross Ton
Rolling, 4-in. and over	$35.00
Rolling, 2-in. and smaller	36.00
Forging, ordinary	40.00
Forging, guaranteed	45.00

Sheet Bars

	Per Gross Ton
Open-hearth or Bessemer	$36.00

Slabs

	Per Gross Ton
8 in. x 2 in. and larger	$35.00
6 in. x 2 in. and smaller	36.00

Skelp

	Per Lb.
Grooved	1.90c.
Sheared	1.90c.
Universal	1.90c.

Wire Rods

	Per Gross Ton
*Common soft, base	$45.00
Screw stock	$5.00 per ton over base
Carbon 0.20% to 0.40%	3.00 per ton over base
Carbon 0.41% to 0.55%	5.00 per ton over base
Carbon 0.56% to 0.75%	7.50 per ton over base
Carbon over 0.75%	10.00 per ton over base
Acid	15.00 per ton over base

*Chicago mill base is $46. Cleveland mill base, $45.

Prices of Raw Materials

Ores

Lake Superior Ores, Delivered Lower Lake Ports

	Per Gross Ton
Old range Bessemer, 51.50% iron	$4.55
Old range non-Bessemer, 51.50% iron	4.40
Mesabi Bessemer, 51.50% iron	4.40
Mesabi non-Bessemer, 51.50% iron	4.25
High phosphorus, 51.50% iron	4.15

Foreign Ore, c.i.f. Philadelphia or Baltimore

	Per Unit
Iron ore, low phos., copper free, 55 to 58% iron in dry Spanish or Algerian	9.50c. to 10c.
Iron ore, Swedish, average 66% iron	9.50c.
Manganese ore, washed, 51% manganese, from the Caucasus	45c.
Manganese ore, Brazilian or Indian, nominal	42c. to 44c.
Tungsten ore, high grade, per unit, in 60% concentrates	$12.00 to $13.00
	Per Ton
Chrome ore, Indian basic, 48% Cr_2O_3, crude, c.i.f. Atlantic seaboard	$22.00 to $23.00
	Per Lb.
Molybdenum ore, 85% concentrates of MoS_2, delivered	55c. to 60c.

Coke

	Per Net Ton
Furnace, f.o.b. Connellsville prompt	$3.00
Foundry, f.o.b. Connellsville prompt	$4.00 to 4.50
Foundry, by-product, Ch'go ovens	9.75
Foundry, by-product, New England, del'd	12.50
Foundry, by-product, Newark or Jersey City, delivered	10.50 to 11.52
Foundry, Birmingham	5.50
Foundry, by-product, St. Louis or Granite City	10.00

Coal

	Per Net Ton
Mine run steam coal, f.o.b. W. Pa. mines	$1.40 to $1.90
Mine run coking coal, f.o.b. W. Pa. mines	1.65 to 1.90
Mine run gas coal, f.o.b. Pa. mines	1.90 to 2.10
Steam slack, f.o.b. W. Pa. mines	1.30 to 1.40
Gas slack, f.o.b. W. Pa. mines	1.40 to 1.50

Ferromanganese

	Per Gross Ton
Domestic, 80%, furnace or seab'd	$88.00 to $95.00
Foreign, 80%, Atlantic or Gulf port, duty paid	$88.00 to 110.00

Spiegeleisen

	Per Gross Ton Furnace
Domestic, 19 to 21%	$32.00 to $34.00
Domestic, 16 to 19%	31.00 to 33.00

Electric Ferrosilicon

	Per Gross Ton Delivered
50%	$85.00
75%	145.00

Per Gross Ton Furnace		Per Gross Ton Furnace	
10%	$42.00	12%	$42.00
11%	42.00	14 to 16%	$45 to 46.00

Bessemer Ferrosilicon

F.o.b. Jackson County, Ohio, Furnace

Per Gross Ton		Per Gross Ton	
10%	$33.00	12%	$37.00
11%	35.00		

Silvery Iron

F.o.b. Jackson County, Ohio, Furnace

Per Gross Ton		Per Gross Ton	
6%	$25.50	10%	$31.00
7%	26.50	11%	33.00
8%	27.50	12%	35.00
9%	29.00		

Other Ferroalloys

Ferrotungsten, per lb. contained metal, del'd	$1.20
Ferrochromium, 4% carbon and up, 60 to 70% Cr., per lb. contained Cr. delivered	11.50c.
Ferrovanadium, per lb. contained vanadium, f.o.b. furnace	$3.25 to $4.00
Ferrocarbontitanium, 15 to 18%, per net ton, f.o.b. furnace, in carloads	$200.00
Ferrophosphorus, electric or blast furnace material, in carloads, 18%, Rockdale, Tenn., base, per net ton	$91.00
Ferrophosphorus, electric, 24%, f.o.b. Anniston, Ala., per net ton	$122.50

Fluxes and Refractories

Fluorspar

	Per Net Ton
Domestic, 85% and over calcium fluoride, not over 5% silica, gravel, f.o.b. Illinois and Kentucky mines	$17.50 to $18.00
No. 2 lump, Illinois and Kentucky mines	$20.00
Foreign, 85% calcium fluoride, not over 5% silica, c.i.f. Atlantic port, duty paid,	$17.41 to $18.00
Domestic, No. 1 ground bulk, 95 to 98% calcium fluoride, not over 2½% silica, f.o.b. Illinois and Kentucky mines	$32.50

Fire Clay

Per 1000 f.o.b. Works	High Duty	Moderate Duty
Pennsylvania	$43.00 to $46.00	$40.00 to $43.00
Maryland	48.00 to 50.00	43.00 to 45.00
New Jersey	55.00 to 75.00	
Ohio	43.00 to 46.00	40.00 to 43.00
Kentucky	43.00 to 45.00	40.00 to 43.00
Illinois	43.00 to 45.00	40.00 to 43.00
Missouri	40.00 to 43.00	35.00 to 38.00
Ground fire clay, per ton	6.50 to 7.50	

Silica Brick

	Per 1000 f.o.b. Works
Pennsylvania	$40.00
Chicago	45.00
Birmingham	54.00
Silica clay, per ton	$8.00 to 9.00

Magnesite Brick

	Per Net Ton
Standard size, f.o.b. Baltimore and Chester, Pa.	$65.00
Grain magnesite, f.o.b. Baltimore and Chester, Pa.	40.00

Chrome Brick

	Per Net Ton
Standard size	$45.00 to $48.00

Mill Prices of Bolts, Nuts, Rivets and Set Screws

Bolts and Nuts

(Less-than-Carload Lots)

(F.o.b. Pittsburgh, Cleveland, Birmingham and Chicago)

	Per Cent Off List
Machine bolts, small, rolled threads	60 and 10
Machine bolts, all sizes, cut threads	50, 10 and 10
Carriage bolts, smaller and shorter, rolled threads	50, 10 and 10
Carriage bolts, cut threads, all sizes	50 and 10
Eagle carriage bolts	65 and 10
Lag bolts	60, 10 and 10
Plow bolts, Nos. 3 and 7 heads	50 and 10
(Extra of 20% for other style heads)	
Machine bolts, c.p.c. and t. nuts, ⅜ x 4 in.,	45, 10 and 5
Larger and longer sizes	45, 10 and 5
Bolt ends with hot-pressed nuts	50, 10 and 10
Bolt ends with cold-pressed nuts	45, 10 and 5
Hot-pressed nuts, blank and tapped, square,	4.00c. per lb. off list
Hot-pressed nuts, blank or tapped, hexagons,	4.40c. per lb. off list
C.p.c. and t. square or hex. nuts, blank or tapped	4.10c. per lb. off list
Washers*	6.50c. to 6.25c. per lb. off list

*F.o.b. Chicago and Pittsburgh.

The discount on machine, carriage and lag bolts is 5 per cent more than above for car lots. On hot-pressed and cold-punched nuts the discount is 25c. more per 100 lb. than quoted above for car lots.

Bolts and Nuts

(Quoted with actual freight allowed up to but not exceeding 50c. per 100 lb.)

	Per Cent Off List
Semi-finished hexagon nuts:	
⅞ in. and smaller, U. S. S.	80, 10 and 5
⅞ in. and larger, U. S. S.	75, 10 and 5
Small sizes, S. A. E.	80, 10, 10 and 5
S. A. E., ⅝ in. and larger	75, 10, 10 and 5
Stove bolts in packages	80, 10 and 5
Stove bolts in bulk	80, 10, 5 and 2½
Tire bolts	60 and 5

Semi-Finished Castellated and Slotted Nuts

(Actual freight allowed up to but not exceeding 50c. per 100 lb.)

(To jobbers and consumers in large quantities)

	Per 100 Net S.A.E.	Per 100 Net U.S.S.		Per 100 Net S.A.E.	Per 100 Net U.S.S.
¼-in.	$0.44	$0.44	⅝-in.	$2.35	$2.40
5/16-in.	0.515	0.515	⅞-in.	3.60	3.60
⅜-in.	0.62	0.66	1-in.	5.65	5.80
7/16-in.	0.79	0.90	1⅛-in.	8.90	8.90
½-in.	1.01	1.05	1¼-in.	12.60	13.10
9/16-in.	1.38	1.42	1⅜-in.	18.35	18.35
⅝-in.	1.70	1.73	1½-in.	21.00	21.00

Larger sizes.—Prices on application.

Large Rivets

	Base Per 100 Lb.
F.o.b. Pittsburgh	$2.50 to $2.60
F.o.b. Cleveland	2.70
F.o.b. Chicago	2.75

Small Rivets

	Per Cent Off List
F.o.b. Pittsburgh	70 and 10
F.o.b. Cleveland	70 and 10
F.o.b. Chicago	70 and 10 to 70 and 5

Cap and Set Screws

(Freight allowed up to but not exceeding 50c. per 100 lb.)

	Per Cent Off List
Milled cap screws	80 and 10
Milled standard set screws, case hardened,	80 and 5
Milled headless set screws, cut thread	80
Upset hex. head cap screws, U. S. S. thread,	80, 10 and 10
Upset hex. cap screws, S. A. E. thread,	80, 10 and 10
Upset set screws	80, 10 and 5
Milled studs	70 and 5

Chicago

No Forward Contracting In Steel, But Pressure for Deliveries Is Greater

CHICAGO, April 20.—New business booked by steel mills in this district has shown little change in volume since a week ago. Forward contracting is almost wholly absent, and users are placing orders for immediate requirements. The tonnage of new business placed within the week is not quite so heavy as during the second week in April, and it is not equal to shipments. On the other hand, specifications are heavier as compared with the previous week, and users on the whole are becoming more insistent that mills meet promptly the delivery schedules which were promised. In this respect the railroads are particularly active and are urging all possible haste in the shipment of structural shapes and plates, as well as track material.

This week sees a further expansion in the demand for soft steel bars, this wider interest being manifested by practically all classes of users and, in particular, by reinforcing bar dealers. An inquiry is now before the market for 11,000 tons of bars for a viaduct to be built near Key West, Fla. Tank makers are encouraged by the substantial volume of new inquiry which has appeared this week. Plate bookings are in good volume, and makers anticipate that 36,000 tons of material, largely plates, for a new refinery in this district will be placed within the next week or 10 days.

The building outlook in the territory tributary to Chicago mills appears to be bright, and producers in summing up the larger tonnage projects which have come to their attention estimate that not less than 130,000 tons will be placed this year. A single project which is rapidly taking form in Chicago will require not only 70,000 tons of structural shapes and plates but also 7000 tons of reinforcing bars.

The Chicago mill prices for plates, shapes and bars are firm. Warehouses report that shipments so far in April are holding up well and will compare favorably with those of March, except for the storm period early in this month. Jobbers, however, are watching their inventories closely, and orders to mills usually do not cover their needs for more than 30 to 60 days.

Pig Iron.—The prices of silvery grades are off $1, and the 8 per cent grade is now quoted at $27.50, Jackson, or $32.29, delivered. Northern iron is steady at $22, local furnace, and spot sales are heavier than during the previous week. Shipments so far in April are running about equal to those of March, and furnace operations are unchanged. About 1000 tons of resale Northern foundry iron, all of which has come from one source, has been finding its way into the market. Brokers handling this iron claim to have paid from $21.50 to $21.75, and the bulk of sales was made at $22. A few carloads of this iron averaged about 2.20 per cent silicon and was sold to a user at $22.40. Low phosphorus and Southern iron are inactive, and prices quoted are nominal.

Quotations on Northern foundry, high phosphorus and malleable iron are f.o.b. local furnace, and do not include an average switching charge of 61c. per ton. Other prices are for iron delivered at consumers' yards.

Northern No. 2 foundry, sil. 1.75 to 2.25		$22.00
Northern No. 1 foundry, sil. 2.25 to 2.75		22.50
Malleable, not over 2.25 sil.		22.00
High phosphorus		22.00
Lake Superior charcoal, averaging sil. 1.50, delivered at Chicago		29.04
Southern No. 2 (all rail)	$27.01 to	28.01
Southern No. 2 (barge and rail)	26.18 to	27.18
Low phos., sil. 1 to 2 per cent, copper free	31.20 to	31.70
Silvery, sil. 8 per cent		32.29
Ferrosilicon, 14 to 16 per cent		45.79

Plates.—The trade looks for the early closing of 36,000 tons of material, largely plates, for the new northern Indiana refinery of the Roxana Petroleum Corporation. Inquiry for oil tankage material has improved considerably within the past few days, and mills have booked 4000 tons within the week. Orders have been received at the mills for the 6000 tons of steel required for 500 hopper cars for the Burlington, and the steel will probably be placed soon for 97 passenger and baggage cars recently placed with Western builders by the Pennsylvania. Open inquiries in this district now total only 300 freight cars, and car builders are pessimistic as to what the immediate future may hold. So far this year 31,930 freight cars have been purchased, which is slightly more than the total for the first six months of 1925.

The mill quotation on plates is 2.10c. per lb., base, Chicago.

Ferroalloys.—This market, as a whole, is unusually quiet. The only transactions reported are a few scattered carload lots of ferromanganese at $88, seaboard, or $95.56, delivered. Specifications against ferrosilicon contracts are liberal, and dealers are again quoting the 19 to 21 per cent grade of spiegeleisen at $34, base Hazzard, Pa., or $41.76, delivered.

We quote 80 per cent ferromanganese, $95.56, delivered Chicago; 50 per cent ferrosilicon, $85, delivered; spiegeleisen, 18 to 22 per cent, $41.76, delivered Chicago.

Sheets.—Mill operations have eased off and the average production of blue and galvanized sheets is not greater than 65 or 70 per cent of capacity. New business has fallen off considerably within the week, and shipments are in excess of specifications. Many users did not specify fully against first quarter contracts, and mills, rather than cancel these old obligations and press for new contracts, are following specifications to be entered against first quarter bookings. The tendency of warehouses is to buy more closely, and orders now are for three or four weeks' requirements. Although prices are unchanged, they lack any marked degree of firmness.

Chicago delivered prices from mill are 3.50c. for No. 28 black, 2.65c. for No. 10 blue annealed and 4.75c. for No. 28 galvanized. Delivered prices at other Western points are equal to the freight from Gary plus the mill prices, which are 5c. per 100 lb. lower than the Chicago delivered prices.

Structural Material.—The pending list of projects in this district continues to grow, and awards are fairly liberal. There is much speculation as to the final plans for the Agricultural Mart, Chicago. Engineering work involving a study of the subsoil at the building site is progressing, and preliminary estimates now in the hands of fabricators indicate that not less than 70,000 tons of plates, shapes and bars will be required. This estimate does not include 7000 tons of reinforcing bars required, nor the steel for the ground floor which will house 10 railroad tracks. Mills have just completed a survey which indicates that 104 building projects, each taking over 300 tons and in the aggregate requiring 130,000 tons, are in prospect in Chicago territory. This tonnage, which does not include the Agricultural Mart, is expected to be placed within the current year. Railroads are anxious to get spring construction programs under way and are pressing both fabricators and mills for bridge and structural work and plain material. Mills report that specifications are slightly in excess of shipments, but that new business is lagging.

The mill quotation on plain material is 2.10c., per lb., base, Chicago.

Wire Products.—Mill operations in this district range from 65 to 70 per cent of capacity. The season is backward for the merchant trade, although the favorable weather of the past few days has had a good effect. This has been reflected largely in an increased demand for rails and poultry netting. Business continues active in the extreme South, and makers are well satisfied with the volume of business emanating from the Southwest, which was badly crippled last year due to a severe drought. The manufacturing trade is slowing down. Mill prices are steady and are shown on page 1157.

Bars.—There is a greater activity in soft steel bars, and specifications for the week are heavier than for several months. Inquiry from warehouses for deformed bars is broadening, although with stocks fair and mill delivery prompt, dealers will not commit themselves beyond 30 to 60 days. The Chicago mill price is steady at 2.10c. New business in iron bars is slackening, but specifications are fairly liberal and mills are operating on rolling schedules of from 10 days to two

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weeks. **Bar iron is steady at 2c., Chicago.** Early in the week there was a noticeable falling off in fence post specifications, but within the past few days this situation has reversed and makers are again heavily engaged in forwarding shipments. Both specifications and new business in rail steel bars are about equal to shipments, and the prices are steady at 2c., Chicago. The new freight rates which are expected to go into effect April 25 are disturbing to the trade, since it has been the practice to quote out-of-town jobs on a delivered basis. Mills have now adopted the practice of quoting outside users the mill price, calling attention both to the new and the old freight rates from Chicago. To some points the rates vary considerably. The old rate from Chicago to Galesburg, Ill., was 11½c. and the new rate will be 17½c.

Mill prices per lb. are; Mild steel bars, 2.10c., base, Chicago; common bar iron, 2c., base, Chicago; rail steel bars, 2c., base, Chicago.

Rails and Track Supplies.—No new rail tonnages have appeared during the week, but railroads are becoming more insistent on deliveries. The Southern Pacific bought 21,300 kegs of spikes and 6675 kegs of bolts. There has been no new tie plate business to test the local market, but one maker insists that he will not quote below $2.35, base, per 100 lb.

Standard Bessemer and open-hearth rails, $43; light rails, rolled from billets, $36 to $38 per gross ton, f.o.b. maker's mill.

Standard railroad spikes, 2.90c. to 3c. per lb. mill; track bolts with square nuts, 3.90c. to 4c. mill; steel tie plates, 2.25c. to 2.35c., mill; angle bars, 2.75c., mill.

Cast Iron Pipe.—There appears to be no let-up in the demand. Tonnages placed within the week are not heavy individually, but the aggregate volume of business bulks fairly large. James B. Clow & Sons booked 790 tons of 24-in. pipe for Toledo, Ohio, at $40.80, base Birmingham. Marshfield, Wis., placed 165 tons of 6-in. Class B pipe with the United States Cast Iron Pipe & Foundry Co., and Greenville, Ohio, awarded 250 tons of 4, 6 and 8-in. Class B to the National Cast Iron Pipe Co. Whitehouse, Ohio, will open bids April 30 on 36 tons of 8-in., 203 tons of 6-in. and 80 tons of 4-in. Class B pipe, and Springfield, Ill., is in the market for 500 tons of 24-in. Class C. Deliveries are extending and on 6 to 12-in. now range from 45 to 60 days.

On bids opened by Milwaukee, April 15, on 1860 tons of plain straight pipe, 114 tons of lugged pipe and 58 tons of special castings, the lowest tender on the plain pipe was made by the Lynchburg Foundry Co., which quoted $46.25, delivered, the equivalent of $37.75, base Birmingham. The United States Cast Iron Pipe & Foundry Co. bid $66.90, delivered, on the lugged pipe.

We quote per net ton, delivered Chicago, as follows: Water pipe, 4-in., $53.20 to $54.20; 6-in. and over, $49.20 to $50.20; Class A and gas pipe, $4

Bolts, Nuts and Rivets.—The recession in industrial activity has been reflected in a sharp decline in specifications. The greatest slump has been in releases from the farm implement makers, who are experiencing a seasonal depression. Specifications from the railroads are fair. The requirements of the automobile industry have been heavy, but are gradually tapering off. Bolt and nut plant operations are now between 65 and 70 per cent, as contrasted with close to 80 per cent a week ago.

Billets.—Small billets are steady at $35, Chicago, and local mills have booked 10,000 tons during the week.

Reinforcing Bars.—The outstanding local project is 7000 tons for the proposed Agricultural Mart to be erected north of the Chicago River. The figures asked for are for estimating purposes only. The week has been active, and dealers notice that new inquiries are larger than those which appeared during March. A great many small contracts, ranging from 25 to 100 tons, are being placed from day to day. Dealers are optimistic as to the immediate future, being crowded to the limit in preparing estimates and submitting propositions. Warehouses are not carrying as heavy stocks as they had anticipated would be necessary for the spring demand, and the reason is to be found in satisfactory deliveries from mills. Billet steel reinforcing bars are still quotable at 2.60c., Chicago warehouse. Inquiries and recent awards are shown on page 1171.

Coke.—There has been a slight recession in the rate of foundry operations in this district, but with users' stocks of coke at a low point, the rate of shipments continues as during the previous week. Chicago producers are quoting $9.75, ovens, or $10.25, delivered in the Chicago switching district.

Old Material.—Scrap prices have again declined, bringing values to the lowest level for some time past. Heavy melting steel is 25c. below the top of last week and is now quotable at $13 to $13.50. Stocks of heavy melting steel in the hands of dealers are believed to be low, but railroads are making prompt shipments of comparatively large amounts of this grade, which the market is not readily absorbing. Both the Inland Steel Co. and the Wisconsin Steel Works have taken small tonnages of heavy melting within the week at $13.50 per gross ton, delivered, but it is doubtful if this prices could again be obtained. Trading among dealers is not heavy and is at the $13 level. Favorable weather has caused scrap to move more freely, and there is an excess of all grades except possibly malleable. The Illinois Central is offering a list totaling 5300 tons.

We quote delivered in consumers' yards, Chicago and vicinity, all freight and transfer charges paid for all items except relaying rails, including angle bars to match, which are quoted f.o.b. dealers' yards:

Per Gross Ton

Heavy melting steel	$13.00 to $13.50
Frogs, switches and guards, cut apart, and miscellaneous rails	14.75 to 15.25
Shoveling steel	13.00 to 13.25
Hydraulic compressed sheets	11.50 to 12.00
Drop forge flashings	10.00 to 10.50
Forged, cast and rolled steel car wheels	17.75 to 18.25
Railroad tires, charging box size	18.00 to 18.50
Railroad leaf springs, cut apart	17.75 to 18.25
Steel couplers and knuckles	16.50 to 17.00
Coil springs	18.50 to 19.00
Low phos. punchings	16.50 to 17.00
Axle turnings	14.50 to 15.00
Relaying rails, 56 to 60 lb.	25.00 to 26.00
Relaying rails, 65 lb. and heavier	26.00 to 31.00
Rerolling rails	16.25 to 16.75
Steel rails, less than 3 ft.	17.00 to 17.50
Iron rails	15.00 to 15.50
Cast iron borings	11.00 to 11.50
Short shoveling turnings	11.00 to 11.50
Machine shop turnings	7.75 to 8.25
Railroad malleable	17.50 to 18.00
Agricultural malleable	16.50 to 17.00
Angle bars, steel	15.50 to 16.00
Cast iron car wheels	16.50 to 17.00

Per Net Ton

No. 1 machinery cast	16.25 to 16.75
No. 1 railroad cast	15.50 to 16.00
No. 1 agricultural cast	15.50 to 16.00
Stove plate	13.75 to 14.25
Grate bars	13.00 to 13.50
Brake shoes	12.25 to 12.75
Iron angle and splice bars	14.75 to 15.25
Iron arch bars and transoms	19.50 to 20.00
Iron car axles	24.50 to 25.00
Steel car axles	17.50 to 18.00
No. 1 railroad wrought	12.25 to 12.75
No. 2 railroad wrought	11.50 to 12.00
No. 1 busheling	10.25 to 10.75
No. 2 busheling	6.50 to 7.00
Locomotive tires, smooth	16.00 to 16.50
Pipes and flues	10.00 to 10.50

Warehouse Prices, f.o.b. Chicago

	Base per Lb.
Plates and structural shapes	3.10c.
Mild steel bars	3.00c.
Reinforcing bars, billet steel	2.60c.
Cold-finished steel bars and shafting—	
Rounds and hexagons	3.60c.
Flats and squares	4.10c.
Hoops	4.15c.
Bands	3.65c.
No. 28 black sheets	4.10c.
No. 10 blue annealed sheets	3.50c.
No. 28 galvanized sheets	5.25c.
Standard railroad spikes	3.55c.
Track bolts	4.55c.
Structural rivets	3.50c.
Boiler rivets	3.70c.

	Per Cent off List
Machine bolts	50 and 5
Carriage bolts	47½
Coach or lag screws	55 and 5
Hot-pressed nuts, square, tapped or blank	3.25c. off per lb.
Hot-pressed nuts, hexagons, tapped or blank	3.75c. off per lb.
No. 8 black annealed wire, per 100 lb.	$3.30
Common wire nails, base per keg	2.05
Cement coated nails, base per keg	3.05

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New York

Pig Iron Buyers Still Waiting—Lower Rate of Steel Buying

NEW YORK, April 20.—While it is apparent that pig iron buyers are postponing their purchases as long as possible in order to get the benefit of reductions in prices, if any should be made, the amount of tonnage bought for early requirements is bulking surprisingly large. In most cases individual purchases are small, but they are numerous enough to form a fair aggregate. Total sales in this district in the past week are conservatively estimated at 9000 tons. The Richardson & Boynton Co., which was in the market for 800 tons of foundry iron for its Dover, N. J., plant, has purchased only 300 tons, placing it with an eastern Pennsylvania furnace. The Moore Brothers Co., Elizabeth, N. J., has bought 200 tons of domestic foundry iron. These tonnages are typical of recent sales. One of the few orders of any size closed during the week was 1000 tons of domestic foundry iron placed for delivery through the second quarter. The New York Air Brake Co.'s inquiry for 1000 tons for Watertown, N. Y., and that of the Utica Heater Co., Utica, N. Y., for 3000 to 5000 tons, which were expected to prove real tests of the market, are still open. There is no question that melters, because of declines in other markets, are looking for reductions by furnaces serving this district. This expectation, moreover, has had the effect of reducing purchases of foreign iron. In view of the active foreign competition along the seaboard it is a matter of comment that the real break in pig iron occurred in Western markets. New inquiries include one for 2500 tons of foundry for delivery through the current quarter.

We quote per gross ton delivered in the New York district as follows, having added to furnace prices $2.52 freight from eastern Pennsylvania, $4.91 from Buffalo and $5.54 from Virginia:

East. Pa. No. 2 fdy., sil. 1.75 to 2.25	$24.52
East. Pa. No. 2X fdy., sil. 2.25 to 2.75	25.02
East. Pa. No. 1X fdy., sil. 2.75 to 3.25	25.52
Buffalo fdy., sil. 1.75 to 2.25	25.91
No. 2 Virginia fdy., sil. 1.75 to 2.25	29.54

Ferroalloys.—There is practically no demand for ferromanganese even in carload lots and the market is practically unchanged at $88 to $110, seaboard basis. Consumers covered themselves so thoroughly during the recent active price competition by producers that probably 90 per cent of the requirements for 1926 have been provided for. The spiegeleisen market is exceedingly quiet, sales for the week amounting to not more than 200 to 300 tons. Prices are unchanged. Specifications on contract for both of these alloys are very heavy and the same is true of 50 per cent ferrosilicon and standard ferrochromium.

Warehouse Business.—Prices continue unchanged on all products with business only moderately active. Demand for reinforcing bars is light, but despite local strikes in the building trades, purchases of structural material are increasing. The sheet market is quiet but prices continue fairly firm on both black and galvanized.

Cast Iron Pipe.—Private buying continues good and a number of municipalities are reported preparing specifications for sizable lots of pipe. Most makers are booked ahead for the next three months or more. Prices continue firm on the smaller lots purchased privately, with low prices developing occasionally when there is keen competition for municipal business.

We quote pressure pipe per net ton, f.o.b. New York in carload lots, as follows: 6-in. and larger, $50.60 to $52.60; 4-in. and 5-in., $55.60 to $57.60; 3-in., $65.60 to $67.60; with $5 additional for Class A and gas pipe.

Finished Material.—Buying which dwindled last week has remained at the reduced rate, a fact which is taken to indicate that consumption has stepped down slightly from the high plateau it has occupied now for several months. Specifications have bulked larger with some mills than they did in March but the average does not appear any greater than in March. The increases are appearing in concrete bars, pipe and other materials entering into outdoor construction enterprises. Jobbers with space for much more steel than they are carrying will not cover for the future, and, as they are ordering in frequent and small lots, there is a resultant rapid turnover which a few years ago would not have been thought possible. Though prices have withstood the short range buying with its resultant absence of large mill backlogs, there are buyers still making offers at prices not yet established, seeking to find some mill willing to make a break. Mills see no promise of a large scale buying movement and apparently have not changed views as to the present price basis. Railroad equipment purchases continue to come out little by little, and competition among equipment makers remains sharp. Activity in the fabricated steel field continues surprisingly promising; and that demand in general should be so good in view of the belated coming of spring is regarded as a highly favorable factor.

We quote for mill shipments, New York delivery, as follows: Soft steel bars, 2.34c. to 2.44c. per lb.; plates, 2.24c.; structural shapes, 2.24c. to 2.34c.; bar iron, 2.24c.

Coke.—Demand continues at about normal and prices of Connellsville coke are unchanged. Standard foundry continues at $8.41 to $9.41 per ton, delivered Newark and Jersey City, N. J., districts, $8.53 to $9.53 per ton, delivered northern New Jersey and $9.29 to $10.29 per ton, delivered New York or Brooklyn. Furnace grade is quoted at about $9.91, delivered Newark and Jersey City districts, and $7.03 per ton, delivered in northern New Jersey. By-product coke was recently reduced 75c. per ton and is now quoted at $9.75 to $10.77 per ton, delivered Newark or Jersey City, N. J.

Warehouse Prices, f.o.b. New York

	Base per Lb.
Plates and structural shapes	3.24c. to 3.34c.
Soft steel bars and small shapes	3.14c. to 3.24c.
Iron bars	3.24c.
Iron bars, Swedish charcoal	7.00c. to 7.25c.
Cold-finished steel shafting and screw stock—	
Rounds and hexagons	4.00c.
Flats and squares	4.50c.
Cold-rolled strip, soft and quarter hard	6.25c.
Hoops	4.49c.
Bands	3.99c.
Black sheets (No. 28 gage)	4.50c.
Blue annealed sheets (No. 10 gage)	3.89c.
Galvanized sheets (No. 28 gage)	5.65c.
Long terne sheets (No. 28 gage)	6.35c.
Standard tool steel	12.00c.
Wire, black annealed	4.50c.
Wire, galvanized annealed	5.15c.
Tire steel, 1½ x ½ in. and larger	3.30c.
Smooth finish, 1 to 2½ x ¼ in. and larger	3.65c.
Open-hearth spring steel, bases	4.50c. and 7.00c.
	Per Cent Off List
Machine bolts, cut thread	40 and 10
Carriage bolts, cut thread	30 and 10
Coach screws	40 and 10
Boiler Tubes—	Per 100 Ft.
Lap welded steel, 2-in.	$17.33
Seamless steel, 2-in.	20.24
Charcoal iron, 2-in.	25.00
Charcoal iron, 4-in.	67.00

Discounts on Welded Pipe

Standard Steel—	Black	Galv.
½-in. butt	46	29
¾-in. butt	51	37
⅛-in. butt	53	39
2½-6-in. lap	48	35
7 and 8-in. lap	44	17
11 and 12-in. lap	37	12
Wrought Iron—		
½-in. butt	4	+19
¾-in. butt	11	+ 9
1-1½-in. butt	14	+ 6
2-in. lap	5	+14
3-6-in. lap	11	+ 6
7-12-in. lap	3	+16

Tin Plate (14 *x* 20 *In.*)

	Primes	Seconds
Coke, 100-lb. base box	$6.45	$6.20
Charcoal, per box—	A	AAA
IC	$9.70	$12.10
IX	12.00	14.25
IXX	13.90	16.00

Terne Plate (14 *x* 20 *In.*)

IC—20-lb. coating	$10.00 to $11.00
IC—30-lb. coating	12.00 to 13.00
IC—40-lb. coating	13.75 to 14.25

Old Material.—Moderate activity continues with purchases by consumers largely of small lots. Although a sufficient tonnage of scrap is reported coming out at present buying prices of brokers, lower price ideas mark the attitude of the mills, with brokers however, showing no inclination to reduce prices. Heavy melting steel is unchanged at $15.50 to $16 per ton, delivered eastern Pennsylvania. A Harrisburg consumer of cast borings, machine shop turnings and bundled skeleton has reduced its purchase price, and brokers are now offering $13 per ton on all three grades for this delivery. This brings the buying price at New York to $9.22 per ton, which practically eliminates this shipment for yards here, as better prices are offered for delivery to other eastern Pennsylvania consumers. A Phoenixville mill is receiving turnings, cast borings and bundled skeleton for which brokers are paying $13 to $13.25 per ton delivered on a freight rate of $3.53 per ton. Cast borings shipped to Birdsboro, Pa., bring $14 per ton, delivered. Borings and turnings are quoted by brokers at $13 per ton, delivered Steelton, $12.50 per ton, delivered Bethlehem, and $14 per ton, delivered Birdsboro, Pa.

Buying prices per gross ton, New York, follow:

Heavy melting steel (yard)	$10.00 to $11.00
Heavy melting steel (railroad or equivalent)	12.00 to 12.75
Rails for rolling	12.75 to 13.00
Relaying rails, nominal	23.00 to 24.00
Steel car axles	19.50 to 20.00
Iron car axles	23.75 to 24.25
No. 1 railroad wrought	14.50 to 15.00
Forge fire	10.00 to 11.00
No. 1 yard wrought, long	13.50 to 14.00
Cast borings (steel mill)	9.25 to 10.25
Cast borings (chemical)	12.50 to 13.00
Machine shop turnings	9.25 to 10.25
Mixed borings and turnings	9.75 to 10.25
Iron and steel pipe (1 in. diam., not under 2 ft. long)	11.50 to 12.50
Stove plate (steel mill)	9.75 to 10.25
Stove plate (foundry)	11.25 to 11.75
Locomotive grate bars	11.25 to 11.75
Malleable cast (railroad)	16.00 to 17.00
Cast iron car wheels	13.50 to 14.00
No. 1 heavy breakable cast	12.50 to 14.50

Prices which dealers in New York and Brooklyn are quoting to local foundries per gross ton follow:

No. 1 machinery cast	$17.00 to $17.50
No. 1 heavy cast (column, building material, etc.), cupola size	15.50 to 16.00
No. 2 cast (radiators, cast boilers, etc.)	14.50 to 15.00

Cleveland

Declines In Cold-Rolled Strip and Alloy Steel—Black Sheets Weak

CLEVELAND, April 20.—Demand for finished steel shows some slackening, but is still fair. Production is being maintained at the recent rate except by a few of the Valley district sheet makers, who have shut down some of their mills. Producers are running closer to the end of their orders than a week or two ago, and pressure for business is keen. The outstanding feature of the market from a price standpoint is the development of extreme weakness in cold-rolled strip steel, which evidently resulted to some extent from the decline in automobile body sheets.

The demand for wire products from jobbers and the retail trade, which has been slow, shows a little more life. Most manufacturing plants in the metal-working industry are operating well and report that their business is holding up to recent volume. The only change in the automobile situation is the reported release of steel by two Detroit motor car builders who had curtailed their plant operations materially and had held up shipments from mills. Stocks of unsold cars are said to be large, a fact which is attributed to a considerable extent to bad weather conditions.

Little new structural work is coming out either in northern Ohio or in the Detroit territory. The Lima Locomotive Works has placed 750 tons of plates with an Eastern mill for 25 locomotives for the Pennsylvania Railroad. Prices are unchanged and firm at 2c., Pittsburgh, for steel bars, 1.90c. for plates and 1.90c. to 2c. for structural material.

Pig Iron.—Sales during the week were light. Large consumers, in the opinion of some producers, have been scared out of the market by the recent price reductions and are waiting to see if prices will go lower. There were some small-lot sales during the week, but no tonnage business. Larger buyers who have not yet covered appear to have enough iron for their early needs. Northern foundry and malleable iron appear to be holding at recent reductions in the surrounding territories. Cleveland producers quote these grades at $19 for out-of-town shipment, and $20, furnace, for local delivery. Lake furnaces quote these grades at $20.50, furnace, for shipment to western Ohio and Indiana and at $21 for delivery in Michigan. Buffalo producers are holding to $21, furnace, and regard it as useless to shade this price for Eastern shipment in an effort to meet the competition of foreign iron which in No. 2 foundry grade is reported to have been sold at $20, delivered Boston or Philadelphia. To meet this price Buffalo furnaces would have to go to $15.09, Buffalo. Jackson County silvery iron has declined another $1 a ton to $27.50, furnace, for 8 per cent, a total decline of $3 in two weeks. Tennessee foundry iron has declined $1 a ton to $20.50, base Birmingham. Although steel foundries have attempted to force producers of low phosphorus iron to make price concessions equivalent to that made on other grades, a Valley producer is holding to $27.50, furnace, for low phosphorus iron and during the week sold a number of small lots aggregating about 1500 tons. Shipping orders from some of the large consumers in the automobile field have fallen off because of the recent slowing down in that industry.

Quotations below, except on basic and low phosphorus iron, are delivered Cleveland, and for local iron include a 50c. switching charge. Ohio silvery and Southern iron prices are based on a $5.02 freight rate from Jackson and $6.01 from Birmingham:

Basic, Valley furnace	$18.50
N'th'n No. 2 fdy., sil. 1.75 to 2.25	20.50
Southern fdy., sil. 1.75 to 2.25	$26.51 to 28.01
Malleable	20.50
Ohio silvery, 8 per cent	30.52
Standard low phos., Valley furnace	27.50

Semi-Finished Steel.—With the weakness in the sheet market, some of the sheet makers have renewed efforts to force down prices of sheet bars, but producers generally are holding to regular quotations, although one mill is understood to have offered Bessemer sheet bars at $35, Pittsburgh, or a concession of $1 a ton, for immediate specifications. Shipments against contracts are rather light.

Sheets.—The $2 a ton reduction in automobile body sheets to 4.30c., announced last week, has been generally placed in effect by manufacturers and now is the recognized market price. This reduction is being reflected in further weakness in black sheets, on which some mills are now naming 3.20c., and as low as 3.10c., Pittsburgh, has been quoted. Blue annealed sheets are unchanged at 2.40c. to 2.50c., with the lower price rather common except for small lots. Galvanized sheets are unchanged at 4.50c., Pittsburgh, with occasional quotations of 4.50c., Youngstown, appearing. New demand is light, and shipments are in excess of new business. Some of the Youngstown district mills have curtailed production.

Strip Steel.—Cold-rolled strip steel has further declined $5 a ton to 3.50c., Cleveland and Pittsburgh, for large orders, and a leading Detroit automobile manufacturer, who often is able to buy below the market, is understood to have placed a large tonnage at around 3.30c. The maximum price now appears to be 3.75c. Hot-rolled strip steel is in light demand, and mills are in need of orders. However, regular prices appear to be firmly maintained.

Warehouse Prices, f.o.b. Cleveland

	Base per Lb.
Plates and structural shapes	3.00c.
Mild steel bars	3.00c.
Cold-finished rounds and hexagons	3.90c.
Cold-finished flats and squares	4.40c.
Hoops and bands	3.65c.
No. 28 black sheets	4.10c.
No. 10 blue annealed sheets	3.25c.
No. 28 galvanized sheets	5.25c.
No. 9 annealed wire, per 100 lb	$3.00
No. 9 galvanized wire, per 100 lb	3.45
Common wire nails, base, per keg	3.00

Reinforcing Bars.—New demand is light, and prices are untested. While small lots of rail steel bars are bringing 1.80c., mill, this price might be shaded $1 a ton for a round lot.

Warehouse Business.—There is some irregularity in jobbers' prices on sheets but the demand, which has been slow, shows more life. Other warehouse prices are firm.

Alloy Steel.—The demand is not so heavy as a few weeks ago, owing to a slowing down in the automotive industry. Prices above 4.50c. per lb. on 3½ per cent nickel steel and 3.50c. on nickel chrome steel, Series 3100, have disappeared, and the prices named above might be shaded on attractive lots. A round-lot sale of chrome steel, Series 5100, brought a $2 a ton concession from recent quotations. Some manufacturers have abandoned the differential that they some time ago attempted to place in effect between nickel chrome vanadium and chrome vanadium bars.

Coke.—There is a limited demand for foundry coke in small lots for immediate shipment, on which prices are unchanged at $4.25 to $5.25, ovens, for standard Connellsville brands. Ohio by-product foundry coke is quoted at $8, Painesville.

Fluorspar.—There has been some activity in gravel fluorspar the past week. All business placed here brought $18, mines, which is the price quoted by leading dealers.

Bolts, Nuts and Rivets.—The demand for bolts and nuts is holding up to recent volume except from the automotive industry. Makers are keeping up their recent operations, but are unable to accumulate a backlog. Prices are firm. Rivet makers are getting a fair volume of business in specifications against second quarter contracts, which were taken at $2.60 per 100 lb. Small rivets are in good demand.

Iron Ore.—While the market is not very active, a number of small-lot sales were made during the week and some fair-sized tonnages are pending. Furnaces using Lake Superior ore consumed during March 5,159,779 tons of Lake ore, as compared with 4,389,375 tons during February. The consumption in March last year was 5,490,245 tons. On April 1 the amount of ore in furnace yards was 17,119,606 tons. The amount in furnace yards and on docks on April 1 was 22,610,228 tons, as compared with 20,790,759 tons on the same date a year ago. There were 196 furnaces using Lake ore in blast March 31, an increase of eight for the month.

Old Material.—Prices appear to have hit bottom for the present, as new quotations are unchanged. However, the tone of the market is still weak. There is little activity. Most buying that is being done by consumers is in small lots. Local dealers paid $14.25 the past week for heavy melting steel delivered to a Cleveland mill to cover contracts, but some are now offering only $14 for this grade. Machine shop turnings have declined, as there is no local demand and Cleveland dealers contend that their only market at present is Canton, where this grade is bringing $11.50. Some blast furnace scrap has moved at $11.75, delivered to northern Ohio furnaces. Scrap purchases were made by a West Virginia consumer during the week at reported prices of $16.50 for heavy melting steel and $15.50 for compressed sheet steel. Valley district dealers are offering $16 for heavy melting steel scrap.

We quote dealers' prices f.o.b. Cleveland per gross ton:

Heavy melting steel	$13.50 to $13.75
Rails for rolling	16.75 to 17.00
Rails under 3 ft	17.50 to 18.00
Low phosphorus melting	16.75 to 17.00
Cast iron borings	11.00 to 11.25
Machine shop turnings	10.25 to 10.50
Mixed borings and short turnings	11.00 to 11.25
Compressed sheet steel	12.75 to 13.00
Railroad wrought	13.75 to 14.25
Railroad malleable	19.50 to 20.00
Light bundled sheet stampings	11.50 to 11.75
Steel axle turnings	13.50 to 14.00
No. 1 cast	16.50 to 17.00
No. 1 busheling	11.00 to 11.25
Drop forge flashings	12.50 to 13.00
Railroad grate bars	13.00 to 13.25
Stove plate	13.00 to 13.25
Pipes and flues	11.50 to 12.00

Philadelphia

Pig Iron Market Dull But $22 Base Holds —Scrap Continues to Soften

PHILADELPHIA, April 20.—Purchasing in the steel market continues to be confined to small lots for prompt shipment, but any tendency toward slowing down has not as yet shown definite development. Plates are evidently fairly firm at the present basis and current buying of small tonnages with prospect of further business as a result of railroad contracts for ferryboats and car floats seems to promise continuance of a fair volume of business.

The downward tendency of prices in the scrap market that was evident last week on a few grades is spreading to others, such as borings and turnings, bundled sheets, No. 1 cast and breakable cast. Heavy melting steel is softer and the entire market is apparently settling to a slightly lower level.

Pig iron continues calm with eastern Pennsylvania furnaces maintaining the $22 per ton base on foundry iron except for occasional equalization of freight rates. Considerable interest is manifest in the tariff hearing at Washington today, and a number of Philadelphia sellers were in attendance.

Pig Iron.—Eastern Pennsylvania furnaces, which have thus far been unaffected in their quotations of $22, base, for foundry by the break in the Buffalo and Pittsburgh markets, seem to be gaining some confidence that this price may be maintained, at least for the present. Prospect that the present tariff on imported iron of 75c. per ton may be increased under the flexible provision of the tariff to $1.125 per ton is apparently contributing some strength to their conviction. No new inquiry of any size has appeared in the past week, current business being almost entirely in small lots, ranging in size up to a few hundred tons. Equalization of freight rates marks the only apparent deviation from the present basis of prices. Basic is unchanged, the two latest sales having established the market at $21.75 in one instance and at $22.25 in the other. Foreign iron continues at low prices, $20 per ton and less being quoted to dealers here by Continental and British furnace interests.

The following quotations are, with the exception of those on low phosphorus iron, for delivery at Philadelphia and include freight rates varying from 76c. to $1.63 per gross ton:

East. Pa. No. 2 plain, 1.75 to 2.25 sil.	$22.76 to $23.63
East. Pa. No. 2X, 2.25 to 2.75 sil.	23.26 to 24.13
East. Pa. No. 1X	23.76 to 24.63
Virginia No. 2 plain, 1.75 to 2.25 sil.	27.67 to 28.67
Virginia No. 2X, 2.25 to 2.75 sil.	28.17 to 29.17
Basic, delivered eastern Pa.	21.75 to 22.25
Gray forge	22.00 to 22.50
Malleable	22.50 to 23.00
Standard low phos. (f.o.b. furnace)	22.50 to 23.50
Copper bearing low phos. (f.o.b. furnace)	23.50 to 24.00

Semi-Finished Material.—Purchases of billets are small but the price is unchanged at $35 per ton, Pittsburgh, for rerolling quality, with slightly better occasionally obtainable on the smaller and less favorable specifications. Forging quality continues at about $40 per ton, Pittsburgh.

Bars.—The 2c. per lb., Pittsburgh, price is unchanged and a good volume of small orders is apparently coming in from this district. The present rate of booking is evidently on a par with that of recent weeks.

Structural Material.—Quotations range from 1.80c. per lb. to 1.90c. per lb., the higher price being principally applicable to small lots for prompt shipment. The Northeast Sewage Disposal plant, involving about 800 tons, is open for new bids based on more detailed information to bidders on the local conditions to be surmounted. Two apartment buildings totaling about 600 tons are open for bids in Philadelphia.

Plates.—The quotation of 1.90c. per lb., Pittsburgh, continues firm. The Conowingo, Md., hydroelectric project will probably involve a sizable plate purchase.

The Erie Railroad is understood to have placed six ferryboats with the American Brown Boveri Electric Corporation and the Pennsylvania Railroad is reported to have awarded four steel car floats to William Cramp & Sons Ship & Engine Building Co. The Federal Shipbuilding Co., Kearny, N. J., will build a $2,000,000 steamship for the Southern Pacific Co.

Ferromanganese.—Demand is light, most consumers evidently having covered their immediate requirements. While the domestic market is quoted at $90 to $95 per ton, the $88 per ton price could probably be obtained if a desirable tonnage were offered. British sellers continue to quote $110 per ton, seaboard.

Warehouse Business.—Buying continues at about the same level as in March. While prices are generally unchanged, there is a slight tendency to shade the current price of 3c. per lb. on structural material except on rather small lots. Swedish iron bars have been purchased as low as 6c. per lb. up to 6.50c. per lb.

Old Material.—Heavy melting steel is quotable at $16 per ton, delivered eastern Pennsylvania. A steel mill which purchased a tonnage recently at $16.50 per ton is understood to be negotiating for a further contract, offering $16 per ton. One consumer of heavy melting steel, which has been purchasing for several weeks at $16.75, delivered, has temporarily completed its current requirements after buying a total of about 18,000 tons. While brokers see no prospect of any firmness to the present market, there is some apprehension that much further reduction in price would seriously curtail the tonnage coming out from accumulaters. A large eastern Pennsylvania user of heavy melting steel recently contracted at $15.50 per ton to a total of close to 30,000 tons. Brokers, however, are thus far paying $15.50 per ton for this delivery.

We quote for delivery, consuming points in this district, as follows:

No. 1 heavy melting steel	$16.00
Scrap rails	$16.00 to 16.50
Steel rails for rolling	17.00 to 17.50
No. 1 low phos., heavy, 0.04 per cent and under	20.00 to 20.50
Couplers and knuckles	19.00 to 19.50
Rolled steel wheels	19.00 to 19.50
Cast iron car wheels	17.50 to 18.00
No. 1 railroad wrought	17.50 to 18.00
No. 1 yard wrought	16.50 to 17.00
No. 1 forge fire	14.50 to 15.00
Bundled sheets (for steel works)	13.50 to 14.00
Mixed borings and turnings (for blast furnace)	13.00 to 13.50
Machine shop turnings (for steel works)	13.50
Heavy axle turnings (or equivalent)	15.00
Cast borings (for steel works and rolling mill)	13.50 to 14.00
Cast borings (for chemical plant)	15.50 to 16.00
No. 1 cast	17.50 to 18.00
Heavy breakable cast (for steel works)	16.50 to 17.00
Railroad grate bars	14.00
Stove plate (for steel works)	14.00
Wrought iron and soft steel pipes and tubes (new specifications)	15.50 to 16.00
Shafting	21.00 to 22.00
Steel axles	22.50 to 23.00

Warehouse Prices, f.o.b. Philadelphia

	Base per Lb.
Tank steel plates, ¾-in. and heavier	2.80c. to 3.00c.
Tank steel plates, ⅜-in.	3.00c.
Structural shapes	2.75c. to 2.90c.
Soft steel bars, small shapes and iron bars (except bands)	3.00c.
Round-edge iron	3.50c.
Round-edge steel, iron finished, 1½ x 1½ in.	3.50c.
Round-edge steel, planished	4.30c.
Reinforcing steel bars, square, twisted and deformed	3.00c.
Cold-finished steel, rounds and hexagons	4.00c.
Cold-finished steel, squares and flats	4.50c.
Steel hoops	4.00c. to 4.25c.
Steel bands, No. 12 gage to ⅛-in., inclusive	3.75c. to 3.90c.
Spring steel	5.00c.
No. 28 black sheets	4.65c.
No. 10 blue annealed sheets	3.50c.
No. 28 galvanized sheets	5.85c.
Diamond pattern floor plates—	
¼-in.	5.30c.
⅜-in.	5.50c.
Rails	3.20c.
Tool steel	8.50c.
Swedish iron bars	6.00c. to 6.50c.

Imports.—Pig iron imports last week fell off considerably from the total of the week before, being only 2600 tons, of which 1350 tons came from Germany, 1000 from England, 250 from the Netherlands. Other imports were: Chrome ore from Cuba, 1328 tons; ferroalloys from Switzerland, 5 tons; steel bars from Sweden, 39 tons; structural steel from Belgium, 214 tons; structural steel from the Netherlands, 30 tons; steel tubing from England, 5 tons; galvanized steel strips from England, 11 tons.

Gear Makers to Discuss Technical and Business Subjects

The program of tenth annual meeting of the American Gear Manufacturers Association, to be held at the Book-Cadillac Hotel, Detroit, May 13, 14 and 15, gives promise of discussion of many of the technical and general problems of the industry.

Progress reports will be made by the several subcommittees of the general technical standardization committee, which is headed by B. F. Waterman, engineer of the Brown & Sharpe Mfg. Co., Providence. Addresses on technical subjects include: "Gear Tooth Stresses," by S. M. Kintner, manager of the research department of the Westinghouse Electric & Mfg. Co.; "Wear on Gear Teeth," by Earle Buckingham, associate professor of engineering standards and measurements, Massachusetts Institute of Technology; and "Predetermining Gear Tooth Quality," by J. L. Williamson, research engineer of the Fellows Gear Shaper Co., Springfield, Vt.

Charles E. Stuart, president of the Central Steel Co., Massillon, Ohio, will address the convention on May 14 on the subject of "America—the Keeper of the Keys." At other sessions W. D. Price, Warner Gear Co., Muncie, Ind., will speak on "Lifting the Veil of Oil Infections," and Mason Britton, vice-president McGraw-Hill Publishing Co., New York, on "Are You Using Pre-War Stuff?"

At the annual banquet to be held on May 14, A. W. Copland, Detroit Gear & Machine Co., Detroit, will be toastmaster, and Charles F. Kettering, vice-president of the General Motors Corporation, will be the principal speaker.

Production Well Maintained at Youngstown

YOUNGSTOWN, April 20.—Iron and steel production is being maintained at an 80 per cent rate, with some curtailment impending in sheet steel and strip output. Schedules from week to week exhibit irregularity in buying of steel sheets, principally by the automobile industry. This week the eight-mill sheet plant at Niles of the Falcon Steel Co. is inactive. Of 127 sheet units in the Mahoning Valley, 101 are rolling, against 108 the preceding week. Of 18 pipe mills, the equivalent of 13½ are in operation.

Fifty-six of 68 open-hearth furnaces are active, including the steel-making departments of the Carnegie Steel Co.

Fabricators are gradually expanding production, to meet enlarged demands arising from construction requirements for steel. Backward weather conditions throughout the Middle West are retarding the secondary steel industry to a considerable extent.

A conference on the standardization of machine tapers has been arranged by the sectional committee on the standardization of small tools and machine tool elements, which is sponsored by the National Machine Tool Builders Association and the American Society of Mechanical Engineers. This conference will be held at the Providence-Biltmore Hotel, Providence, on Wednesday afternoon, May 5.

The Canadian Furnace Co., Ltd., Port Colborne, Ont., blew in its blast furnace April 16 and expects soon to have it working at its capacity of 350 tons per day.

San Francisco

Union Oil Co. Calls for Stock Delivery on 23,000 Tons of Plates

SAN FRANCISCO, April 17 (*By Air Mail*).—The Union Oil Co., Los Angeles, will buy immediately, from stock if possible, about 23,000 tons of steel plates to replace storage tanks recently destroyed by fire at its fields near San Luis Obispo and Brea, Cal. Specifications call for 15,000 tons for 50 80,000-bbl. tanks and 8000 tons for 35 55,000-bbl. tanks. This is the largest plate inquiry that has developed this year. It is understood that the insurance companies will not renew policies on the type of oil reservoirs destroyed in the recent fires, which caused an estimated property loss of $20,000,000. This may mean a larger use of steel in the future for tank work. Several other fresh inquiries for plates, and also for structural shapes, have come into the market during the past week, and fabricated awards have been noticeably larger. Prices generally continue firm.

Pig Iron.—The Southern Pacific Co. has placed 1000 tons of foundry iron with a domestic producer. A large number of small orders for foreign iron have been placed recently with local importers. Prices are unchanged.

	Per Gross Ton
*Utah basic	$27.00 to $28.00
*Utah foundry, sil. 2.75 to 3.25	27.00 to 28.00
**English foundry, sil. 2.75 to 3.25	25.00 to 26.00
**Belgian foundry, sil. 2.75 to 3.25	24.00
**Dutch foundry, sil. 2.75 to 3.25	24.00
**Indian foundry, sil. 2.75 to 3.25	24.00 to 25.00
**German foundry, sil. 2.75 to 3.25	24.00
**Chinese foundry, sil. 3 to 3.50	25.50

*Delivered San Francisco.
**Duty paid, f.o.b. cars San Francisco.

Shapes.—Lettings total 4804 tons; fresh inquiries call for about 900 tons. The two largest awards of the week were made in Los Angeles, where the Llewellyn Iron Works took 1800 tons for an addition to the Roosevelt Building, and the Union Iron Works of Los Angeles 1500 tons for an office building. The largest letting in San Francisco, 575 tons for the Kress Building, was secured by the Minneapolis Steel & Machinery Co. Bids will be taken in San Francisco about May 25 on 800 tons for a pier in Honolulu. The Atlantic Gulf & Pacific Co., San Francisco, recently placed about 1000 tons of miscellaneous material for stock at Manila, P. I., with an Eastern mill. Most of the Eastern mills continue to quote plain material at 2.35c., c.i.f. Coast Ports.

Plates.—Including the Union Oil Co. inquiry for 23,000 tons, prospective business calls for a total of 28,200 tons of plates. The Southern Pacific Co. has placed 200 tons with an Eastern mill, and the Steel Tank & Pipe Co., Berkeley, Cal., has been awarded 55 tons for a special electrically welded penstock job by the San Joaquin Light & Power Co., Fresno, Cal. These constitute the only important transactions known to have been closed during the past week. While most of the Eastern mills continue to ask 2.30c., c.i.f. Coast ports, it is generally understood that 2.25c. would be done on a good-sized tonnage.

Bars.—Most of the reinforcing bar lettings during the week have called for less than 100 tons each, but these have been numerous and the total tonnage placed is estimated at about 2000 tons. The largest individual award, 475 tons, for a warehouse in Oakland, Cal., was taken by Gunn, Carle & Co., San Francisco. Prices are firm, local jobbers quoting as follows: 2.80c., base per lb., on lots of 250 tons; 2.95c., base per lb., on carload lots, and 3.20c., base, on less-than-carload lots.

Cast Iron Pipe.—The city of North Sacramento, Cal., has placed 188 tons of 10-in. Class B cast iron pipe with the United States Cast Iron Pipe & Foundry Co. The city of Eureka, Cal., has awarded 75 tons of 8-in. Class B to the American Cast Iron Pipe Co., and Riverside, Cal., has placed 166 tons of 6-in. Class B with the United States Cast Iron Pipe & Foundry Co. B. Nicoll & Co. is low bidder on 134 tons of 4-in. and 16-in. Class C, for the city of Anaheim, Cal. Quotations are unchanged at $50 to $52 base, water shipment, San Francisco.

Steel Pipe.—The Southern Pacific Co. has closed bids on 150 tons of standard pipe. There is a better movement of material from jobbers' stocks, but no large inquiries have come up.

Warehouse Business.—There is better demand, particularly for wire products. Prices are unchanged.

Tin Plate.—A number of fair-sized inquiries are expected to come into the market in the near future. Several small orders have been placed recently with Eastern producers, who quote tin plate at $5.50 per base box, Pittsburgh.

Coke.—Sales are somewhat larger, but the demand is principally for small lots. Importers quote as follows:

English beehive, $15 to $16 per ton at incoming dock, and English by-product, $12 to $14; German by-product, $11.50 to $12.

Imports.—Since April 1 about 1300 tons of bars and about 150 tons of rails have been received by local firms from Belgium. Most of the bar tonnage has been delivered to a local firm, which will use it for making bolts. The rails are understood to have been purchased by a lumber company in northern California.

Warehouse Prices, f.o.b. San Francisco

	Base per Lb.
Plates and structural shapes	3.30c.
Mild steel bars and small angles	3.30c.
Small channels and tees, ¾-in. to 2¾-in.	3.90c.
Spring steel, ¼-in. and thicker	6.30c.
No. 28 black sheets	4.75c.
No. 10 blue annealed sheets	3.75c.
No. 28 galvanized sheets	6.00c.
Common wire nails, base per keg	$3.50
Cement coated nails, base per keg	3.00

Birmingham

Pig Iron Demand Lags as Melt Declines —Rails Exported

BIRMINGHAM, April 20.—Buying of pig iron still lags, but furnaces in this district feel secure in their positions, holding firmly to the $22 per ton, Birmingham, on No. 2 foundry and offering no concessions for tonnage. Production is being maintained, with 13 blast furnaces making foundry iron, and deliveries are steady. No cancellations against old contracts are reported. Sales already made will absorb a considerable portion of the production for this quarter. Prospects for additional forward business are still regarded as promising. The fact that one of the larger melters of iron has placed an order for more than 10,000 tons of foreign iron and that another regular customer of Southern furnaces bought southern Ohio iron, does not appear to worry Alabama producers. Some business is being placed in this market, although there is much less activity than a few weeks ago. A survey of foundries shows a recession in their respective demands.

We quote per gross ton, f.o.b. Birmingham district furnaces, as follows:

No. 2 foundry, 1.75 to 2.25 sil.	$22.00
No. 1 foundry, 2.25 to 2.75 sil.	22.50
Basic	22.00
Charcoal, warm blast	$30.00 to 32.00

Rolled Steel.—A large quantity of steel is being rolled and fabricated, and demand remains strong in practically all directions. So far as can be learned, there has been little, if any, let-up in the activity of steel works in the district. Smaller fabricators state that present conditions are most satisfactory and that future prospects are bright. Another movement of rails and railroad accessories for export has started. The shipment will amount to nearly 6000 tons and is being moved by Warrior River barge to Mobile. Steel bars are still held at 2.15c. to 2.25c., base Birmingham, tank plates at 2.05c. to 2.15c., and structural shapes at 2.05c. to 2.15c.

Cast Iron Pipe.—Inquiries have declined, as com-

pared to a few weeks ago, but unfilled tonnage on books of the several shops in this district is large and several weeks of active operation of plants will be necessary to fill orders. Demand for soil pipe and fittings is slow, with prices weak. Pressure pipe prices are stationary, remaining at $40 to $41, Birmingham, on 6-in. and larger diameters.

Coke.—Independent producers are still moving their output, and by-product plants are running practically at capacity. Prospects are good, and it is believed that the market will remain active for at least 60 days longer. Foundry coke is selling at around $5.50 per ton, Birmingham.

Old Material.—Demand is slow, but quotations are holding at same level that has been reported for the past two months. There have been very few cancellations of orders, and dealers are considering buying stock and piling it on yards against future demands. Consumers of cast scrap have not been buying, though their shops are maintaining steady operations. Rerolling rails are in better demand, with prices low.

We quote per gross ton, f.o.b. Birmingham district yards, as follows:

Cast iron borings, chemical	$15.00 to $16.00
Heavy melting steel	13.00 to 14.00
Railroad wrought	12.00 to 13.00
Steel axles	18.00 to 19.00
Iron axles	18.00 to 19.00
Steel rails	18.00 to 18.50
No. 1 cast	17.00 to 17.50
Tramcar wheels	17.00 to 17.50
Car wheels	16.00 to 16.50
Stove plate	14.00 to 14.50
Machine shop turnings	8.00 to 8.50
Cast iron borings	8.00 to 9.00
Rails for rolling	15.00 to 16.00

St. Louis

Pig Iron Declines $1—Belgian Bars Sold in Arkansas

ST. LOUIS, April 20.—Sales of pig iron in the district last week totaled about 2500 tons, including 400 tons to a Quincy melter; 200 tons to an Illinois foundry and 150 tons to an Illinois stove plant. The St. Louis Coke & Iron Corporation booked 1400 tons in lots of a carload up to 300 tons for prompt and second quarter shipment. The principal inquiry is from a stove-maker for 1000 to 1500 tons. A machinery manufacturer wants 300 tons, and a western Missouri specialty maker 150 tons for second quarter. The St. Louis Coke & Iron Corporation has reduced its price $1 a ton to $22.50 to $23, Granite City. Chicago iron quotations are unchanged at $22, Chicago, but sales have been made in this territory at $1 to $2 a ton lower. A Tennessee furnace is quoting $21.50, and an Alabama producer $20, both Birmingham base. A slowing down in the melt is reported.

We quote delivered consumers' yards, St. Louis, as follows, having added to furnace prices, $2.16 freight from Chicago, $4.42 from Birmingham, all rail, and 81c. average switching charge from Granite City:

Northern fdy., sil. 1.75 to 2.25	$23.16 to $24.16
Northern malleable, sil. 1.75 to 2.25	23.16 to 24.16
Basic	23.16 to 24.16
Southern fdy., sil. 1.75 to 2.25	25.42 to 27.42
Granite City iron, sil. 1.75 to 2.25	23.31 to 23.81

Warehouse Prices, f.o.b. St. Louis

Plates and structural shapes	3.35c.
Bars, mild steel or iron	3.15c.
Cold-finished rounds, shafting and screw stock	3.75c.
No. 28 black sheets	4.60c.
No. 10 blue annealed sheets	3.60c.
No. 28 galvanized sheets	5.70c.
Black corrugated sheets	4.65c.
Galvanized corrugated sheets	5.75c.
Structural rivets	3.65c.
Boiler rivets	3.85c.
	Per Cent Off List
Tank rivets, ⅞-in. and smaller	70
Machine bolts	50 and 5
Carriage bolts	47½
Lag screws	55 and 5
Hot-pressed nuts, square, blank or tapped	3.25c. off per lb.
Hot-pressed nuts, hexagons, blank or tapped	3.75c. off per lb.

Finished Iron and Steel.—Demand from the railroads has been confined to tank plates. The Louisville & Nashville bought 400 tons, and the Wabash and the Missouri Pacific, each 200 tons, all from the St. Louis district mill for second quarter requirements. The demand for sheets is fair. A lot of 150 tons of reinforcing bars of Belgian manufacture is reported to have been sold in Little Rock, Ark., which is the closest to St. Louis that foreign bars have penetrated. These were shipped from Galveston, Tex., on a 41½c. freight rate, as compared with 40c. from St. Louis district.

Coke.—Purchases of industrial grades are still on a hand-to-mouth basis. The weather has been extremely cold for this time of year, resulting in an unusually good demand for domestic coke.

Old Material.—Consumers continue to hammer down prices, then making heavy purchases at the lower levels. Their purchases during the week totaled about 20,000 tons. The largest sale was 10,000 tons of heavy melting steel and rails for second quarter delivery. This was divided among several dealers. Another large purchase was 3000 tons of car wheels. Prices are from 25c. to 75c. lower. Railroad lists include: Illinois Central, 5000 tons; Missouri Pacific, 2500 tons; St. Louis Southwestern, 1500 tons.

We quote dealers' prices f.o.b. consumers' works, St. Louis industrial district and dealers' yards, as follows:

Per Gross Ton	
Iron rails	$13.00 to $13.50
Rails for rolling	15.50 to 16.00
Steel rails less than 3 ft.	16.50 to 17.00
Relaying rails, 60 lb. and under	24.00 to 25.00
Relaying rails, 70 lb. and over	30.00 to 31.00
Cast iron car wheels	15.50 to 16.00
Heavy melting steel	12.75 to 13.25
Heavy shoveling steel	12.75 to 13.25
Frogs, switches and guards cut apart	14.00 to 14.50
Railroad springs	16.50 to 17.00
Heavy axle and tire turnings	9.00 to 9.50
No. 1 locomotive tires	16.50 to 17.00
Per Net Ton	
Steel angle bars	12.50 to 13.00
Steel car axles	17.50 to 18.00
Iron car axles	22.00 to 22.50
Wrought iron bars and transoms	18.00 to 18.50
No. 1 railroad wrought	11.50 to 12.00
No. 2 railroad wrought	11.50 to 12.00
Cast iron borings	9.00 to 9.50
No. 1 busheling	10.00 to 10.50
No. 1 railroad cast	14.00 to 14.50
No. 1 machinery cast	16.50 to 17.00
Railroad malleable	13.50 to 14.00
Machine shop turnings	6.25 to 6.75
Bundled sheets	7.00 to 7.50

Toronto

Railroad Orders Swell Canadian Mill Operations—More Blast Furnaces In Operation

TORONTO, ONT., April 20.—Canadian railroads recently have placed considerable rolling stock business, which has had a direct bearing on mill operations. In order to cope with the increasing demand for steel, as well as to fill rail orders booked last fall, the Algoma Steel Corporation, Sault Ste. Marie, Ont., has greatly increased operations, with the result that it now has two blast furnaces active and its rail mill in operation, with orders on hand for upwards of 38,000 tons of rails and other business in prospect. Its 12-in. and 18-in. merchant mills are running at full time, and 11 open-hearth furnaces are in operation.

The Steel Co. of Canada, Ltd., Hamilton, Ont., is running at about 75 per cent in all departments, with two blast furnaces blowing. The Steel company is building additions to its Swansea and Hamilton plants in Ontario and to its Montreal, Que., works in order to take care of increased business, as well as to enter into the production of new lines. The British Empire Steel Corporation, Sydney, N. S., is also operating at about 75 per cent, and reports a good volume of business on its books with other orders in prospect. The company has two blast furnaces blowing and, in addition to its steel-making in this country, is shipping large tonnages of ore to the Continent from its Wabana, New foundland, mines.

Boston

Plates Firm at 1.90c—Pig Iron Sales Are Light

BOSTON, April 20.—Pig iron sales in this territory are decreasing rather than increasing, but prices are holding well, nevertheless. Most current business is a result of solicitation, since very few foundries are inclined to send out open inquiries. A New Hampshire foundry, inquiring for 300 tons, changed its specifications somewhat, delaying the purchase of the iron until later this week. Sales the past week included Indian No. 1X iron at $23, on dock duty paid, and lower silicons at $22.50; New York State iron at delivered prices equivalent to a little less than $21, base Buffalo furnace, and more or less special analysis Alabama and western Pennsylvania irons. New England foundries, in general, are well covered for the second quarter and are buying only to balance mixtures. Interest in third quarter iron, which a week or so ago gave signs of life, apparently has evaporated. Common opinion in the trade is that April will be a quiet month in the iron market but that business will improve in May.

We quote delivered prices on the basis of the latest sales as follows, having added $3.65 freight from eastern Pennsylvania, $4.91 from Buffalo, $5.92 from Virginia, and $9.60 from Alabama:

East. Penn., sil. 1.75 to 2.25	$25.65 to $26.15
East. Penn., sil. 2.25 to 2.75	26.15 to 26.65
Buffalo, sil. 1.75 to 2.25	25.91
Buffalo, sil. 2.25 to 2.75	26.41
Virginia, sil. 1.75 to 2.25	29.92
Virginia, sil. 2.25 to 2.75	30.42
Alabama, sil. 1.75 to 2.25	31.60 to 32.60
Alabama, sil. 2.25 to 2.75	32.10 to 33.10

Shapes and Plates.—Mills are holding strongly to 1.90c. per lb., base Pittsburgh, on plates. They have, however, some contracts outstanding at 1.80c. New England structural and boiler shops report considerable inquiry, but are not anticipating steel requirements very far ahead. Competition among boiler makers is exceptionally keen, and that fact helps to restrict buying of plates to a hand-to-mouth basis. It is definitely settled that Stone & Webster, Inc., Boston, will have the old John Hancock Building on Devonshire Street and consequently will not erect its proposed office building. It is reported the site of the proposed office building was taken in part payment for the John Hancock Building by the Atlantic National Bank, which will, at some later date, erect an addition. Shapes are steady and unchanged at 1.90c. per lb., base Pittsburgh.

Cast Iron Pipe.—There has been a lull in the cast iron pipe market. North Andover, Mass., has closed bids on approximately 300 tons of 6-in. to 12-in. pipe and will make an award this week. No other business totaling 100 tons or more has come up for bids. Prices on small pipe remain firm, but concessions are still obtainable on 20-in. and larger. Prices quoted openly on domestic pipe are: 4-in., $60.10 a ton, delivered common Boston freight rate points; 6-in. and larger, $55.10. The usual $5 differential on Class A and gas pipe is asked.

Warehouse Prices, f.o.b. Boston

	Base per Lb.
Soft steel bars and small shapes	3.265c.
Flats, hot rolled	4.15c.
Reinforcing bars	3.265c. to 3.54c.
Iron bars—	
Refined	3.265c.
Best refined	4.60c.
Wayne	5.50c.
Norway, rounds	6.60c.
Norway, squares and flats	7.10c.
Structural shapes—	
Angles and beams	3.365c.
Tees and zees	3.415c.
Plates	3.365c.
Spring steel—	
Open-hearth	5.00c. to 10.00c.
Crucible	12.00c.
Tire steel	4.50c. to 4.75c.
Bands	4.015c. to 5.00c.
Hoop steel	5.50c. to 6.00c.
Cold-rolled steel—	
Rounds and hexagons	3.95c.
Squares and flats	4.45c.
Toe calk steel	6.00c.

Coke.—The New England Coal & Coke Co. and the Providence Gas Co. continue to quote foundry coke at $12.50 a ton, delivered within a $3.10 freight rate zone, and their shipments against first half contracts this month continue to run ahead of those for March. It is doubtful whether these companies will open their books for last half contracts much before the middle of next month, and possibly not before the last of May. Owing to the uncertainty of the business outlook, it is felt that there is little need to hurry foundries on the matter of contracts. Both companies are making prompt shipments. The demand for domestic by-product foundry coke is well sustained and is far in excess of that of a year ago. So far as is known importations of coal, which began in July, 1925, have ceased. There were 84 arrivals from Wales, Scotland, Holland and Germany, with an aggregate of 310,000 tons of coal and coke. The last cargo landed here was 3000 tons of Welsh coal.

Old Material.—Business in old material is spotty and confined very largely to heavy melting steel, turnings, borings, forged material and skeleton, with prices practically the same as a week ago. Some dealers are making two prices on bundled skeleton. For instance, they are paying $9.50 to $10, on cars, for small bundles, but only $8.50 to $9 for large ones. There apparently is no market just now for shafting, street car axles, rerolling rails. A little stove plate is being moved to eastern Pennsylvania, at slightly more than $9, on cars shipping point. Dealers believe they could move more of this grade, but holders are unwilling to let go at prevailing prices. Buyers of heavy melting steel are more exacting than heretofore owing to rejections by Pennsylvania mills. There is a slightly larger movement of textile machinery cast at prices ranging from $19 to $20, delivered, with textile cast bringing top figures.

The following prices are for gross-ton lots delivered consuming points:

Textile cast	$19.50 to $20.00
No. 1 machinery cast	19.00 to 19.50
No. 2 machinery cast	14.50 to 15.50
Stove plate	14.00 to 14.50
Railroad malleable	19.50 to 20.00

The following prices are offered per gross-ton lots, f.o.b. Boston rate shipping points:

No. 1 heavy melting steel	$11.00 to $11.50
No. 1 railroad wrought	13.00 to 13.50
No. 1 yard wrought	12.00 to 12.50
Wrought pipe (1 in. in diameter, over 2 ft. long)	10.75 to 11.25
Machine shop turnings	8.50 to 9.00
Cast iron borings, chemical	11.00 to 11.50
Cast iron borings, rolling mill	8.50 to 9.00
Blast furnace borings and turnings	8.25 to 8.50
Forged scrap	9.00 to 10.00
Bundled skeleton, long	9.00 to 10.00
Forged flashings	9.00 to 10.00
Bundled cotton ties, long	8.75 to 9.25
Bundled cotton ties, short	9.50 to 10.00
Shafting	16.75 to 17.00
Street car axles	16.50 to 17.00
Rails for rerolling	12.00 to 12.50
Scrap rails	11.00 to 11.50

Declines in Detroit Scrap Market

DETROIT, April 20.—The market on old material in this district registered some further declines during the week. Borings, short turnings and long turnings show declines of 50c. per ton. There do not seem to be any strengthening factors in sight; some mills and furnaces are offering to buy at present at the minimum prices or lower than today's quotations and some dealers show anxiety.

The following prices are quoted on a gross ton basis f.o.b. producers' yards, excepting stove plate. No. 1 machinery cast and automobile cast, which are quoted on a net ton basis:

Heavy melting and shoveling steel	$13.25 to $13.75
Borings and short turnings	9.25 to 9.75
Long turnings	8.00 to 8.50
No. 1 machinery cast	17.00 to 18.00
Automobile cast	21.50 to 22.50
Hydraulic compressed	11.00 to 11.75
Stove plate	13.50 to 14.50
No. 1 busheling	11.25 to 11.75
Sheet clippings	7.00 to 7.50
Flashings	10.00 to 10.50

Buffalo

Pig Iron Buyers Feel Out Market—Basic Declines

BUFFALO, April 20.—An interesting situation has developed in this market, with consumers apparently determined to wait for lower prices on pig iron and the makers equally determined to maintain their quotations. The base price of $21, Buffalo, for foundry and malleable has now prevailed for three months and seems as steady as it was at the start, notwithstanding the breaks that have occurred in neighboring markets. There is every reason to believe that certain melters would place their major requirements if they could be certain the market bottom had been reached. In fact, intensive inquiries sent out this week total around 10,000 tons. Radiator interests have been interested in getting quotations on sizable tonnages. The inquiry of the Utica Heater Co., Utica, N. Y., for 4000 to 5000 tons, announced in a previous issue, was followed by a inquiry for 2500 to 3000 tons from the International Heater Co., Utica, and one for 2000 tons from the Continental Heater Co., Dunkirk, N. Y. It is said that no immediate action will be taken on these latter two tonnages. The Gould Coupler Co., New York, is reported to have sought 3000 tons of basic, later deciding to postpone actual buying. The going price on basic iron is $20, Buffalo. The New York Air Brake Co.'s inquiry for 1000 tons of foundry for Watertown, N. Y., is reported still unplaced.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

No. 2 plain fdry., sil. 1.75 to 2.25	$21.00
No. 2X foundry, sil. 2.25 to 2.75	21.50
No. 1X foundry, sil. 2.75 to 3.25	22.50
Malleable, sil. up to 2.25	21.00
Basic	20.00
Lake Superior charcoal	29.28

Old Material.—The market seems to be slipping back, and there is very little buying. It has become known that one of the large mills here bought 10,000 to 15,000 tons of heavy melting steel about two weeks ago at $15.75. The market on this grade of material is now $15.25 to $15.75, while the market on selected No. 1 heavy melting steel is $16 to $16.50. The demand for stove plate has disappeared, and it is now down to $14.25 to $14.50. The demand for cast iron borings is also off. Small lots of railroad malleable have brought as high as $22.50, but $21 to $22 probably represents the going market. Some sales of angle bars and short rails have been made at $18.50, and knuckles and couplers have been sold at $18. There is very little demand for specialties. On recent lists railroads obtained $16.50 for heavy melting steel.

We quote prices per gross ton, f.o.b. Buffalo, as follows:

Heavy melting steel	$15.50 to $16.50
Low phosphorus	18.00 to 18.50
No. 1 railroad wrought	14.00 to 14.50
Car wheels	17.00 to 17.50
Machine shop turnings	11.00 to 11.50
Mixed borings and turnings	12.50 to 13.00
Cast iron borings	12.50 to 13.00
No. 1 busheling	14.00 to 14.50
Stove plate	15.00 to 15.25
Grate bars	13.00 to 13.50
Hand-bundled sheets	11.00 to 11.50
Hydraulic compressed	14.50 to 15.00
No. 1 machinery cast	17.00 to 17.50
Railroad malleable	21.00 to 22.00
Iron axles	24.00 to 25.00
Steel axles	16.00 to 16.50

Finished Iron and Steel.—The mills are going full, but there is practically no forward buying. Some very good bar and shape orders were booked during the week, and there has been a noticeable pickup in sheet specifications. Bars are being quoted at 2.265c., Buffalo, shapes at 2.165c. to 2.265c., and plates at 2.165c. No. 22 gage automobile sheets are now quotable at 4.30c., Pittsburgh. The volume of small fabricated structural business is good, but few sizable tonnages are being placed. There was a large letting of road work on 20 different highways this week in Albany. Reinforcing bar interests also note a distinct increase in the amount of factory construction, which is in the best volume since the war. The Lackawanna plant of the Bethlehem Steel Corporation during the month of March broke all its previous production records for steel ingots.

Warehouse Prices, f.o.b. Buffalo

	Base per Lb.
Plates and structural shapes	3.40c.
Mild steel bars	3.30c.
Cold-finished shapes	4.45c.
Rounds	3.95c.
No. 28 black sheets	4.60c.
No. 10 blue annealed sheets	3.90c.
No. 28 galvanized sheets	5.75c.
Common wire nails, base per keg	$3.90
Black wire, base per 100 lb	3.90

Cincinnati

Silvery Drops Another $1—Blue Annealed and Galvanized Sheets Weak

CINCINNATI, April 20.—Pig iron consumers have bought sparingly in the past week, and there has been unusually keen competition between producers for the small amount of business placed. While Ironton furnaces are securing $20.50, base Ironton, for lots ranging from single carloads up to 100 tons, they are accepting sizable tonnages at $20. Jackson County silvery producers have cut their schedules on silvery and Bessemer ferrosilicon grades $1, making a $3 drop in the past two weeks. This makes $27.50, Jackson, the new quotation for 8 per cent silvery. Alabama furnaces are adhering strictly to $22, base Birmingham, but are losing business in this territory at that price. Tennessee iron is firm at $21.50, base Birmingham. The Williamson Heater Co., Cincinnati, has purchased 1500 tons of Northern foundry, dividing the tonnage between two Ironton sellers. The Jeffrey Mfg. Co., Columbus, Ohio, has bought from 750 to 1000 tons of foundry iron from a Cleveland furnace. A local broker sold 500 tons of foundry in Ohio and 300 tons locally. Valley iron has penetrated the local market, and several small sales have been made to Cincinnati foundries. Inquiries total approximately 2000 tons and consist principally of single carloads.

Based on freight rates of $3.69 from Birmingham and $1.89 from Ironton, we quote f.o.b. Cincinnati:

Alabama fdy., sil. 1.75 to 2.25 (base)	$25.69
Alabama fdy., sil. 2.25 to 2.75	26.19
Tennessee fdy., sil. 1.75 to 2.25	25.19
Southern Ohio silvery, 8 per cent	30.39
So. Ohio fdy., sil. 1.75 to 2.25	$21.89 to 22.39
So. Ohio malleable	21.89 to 22.39

Finished Material.—Bookings in the past week have been below normal. Consumers are refusing to contract for forward delivery, and consequently orders and specifications are limited to immediate requirements. Several weeks ago it was believed that a period of mild weather would bring out considerable business which had been held back by the prolongation of winter. However, it is now feared that much of the tonnage will not be placed until fall or until the spring of 1926. This is especially true of such products as fencing. Despite the lack of a real demand for finished material, prices have been well sustained, barring definite signs of weakness in sheets. Producers feel that a reduction in prices would not bring out a sufficiently large increase in sales to justify such action. Bars are selling at 2c., base Pittsburgh, and structural shapes at 1.90c., base Pittsburgh. The movement of tank plates has been only fair, with 1.90c., base Pittsburgh, the prevailing price. The Louisville & Nashville has bought 400 tons of plates and sheets. In an endeavor to overcome the apathy of consumers several independent sheet mills have offered black sheets at 3.15c., base Pittsburgh. However, other producers still are holding to 3.25c. to 3.35c. Concessions of $2 a ton on galvanized and blue annealed sheets have been made in this territory, the former bringing 4.50c., base Pittsburgh, and the latter 2.40c. The market for wire goods is less active. Common wire nails are quoted at $2.65c, base, per keg, Ironton, and plain wire at $2.50, base, per 100 lb., Ironton. Gas holder fabricators report that business has improved to a marked extent in the past few

weeks. The Cincinnati Street Railway Co., Cincinnati, has purchased 600 tons of girder rails.

Reinforcing Bars.—The market is quiet, and there is no prospect for improvement in the immediate future. New billet bars are quoted at 2c., Cleveland, and rail steel bars at 1.90c., mill.

Warehouse Business.—Sales increased somewhat in the past week. Structural steel and reinforcing bars are in better demand, while the movement of cold-rolled products is moderate in volume. Common wire nails again have been placed on a basis of $2.95 per keg, f.o.b. local warehouse. However, Louisville jobbers are reported to be selling nails at 20c. a keg less than the prevailing local price.

Coke.—The demand for by-product foundry coke has receded. April shipments to date are about 10 per cent less than those in the same period in March. The prevalence of cold weather has been the major factor in sustaining activity in by-product domestic grades. An Ironton, Ohio, blast furnace, which has been using by-product furnace coke, has contracted with the Peabody Coal Co., Cincinnati, for 300 to 350 cars of beehive coke daily for shipment from the latter's ovens at Hellier, Ky. Beehive coke from the Wise County and New River Districts is moving at a moderate rate and prices are unchanged.

Based on freight rates of $2.14 from Ashland, Ky., $3.53 from Connellsville, and $2.59 from Wise County ovens and New River ovens, we quote f.o.b. Cincinnati: Connellsville foundry, $7.53 to $9.53; Wise County foundry, $6.84 to $7.59; New River foundry, $9.59 to $10.09; by-product foundry, $10.14.

Old Material.—Although there is a weaker tone to the market, prices have not been affected. Heavy melting steel is steady at $12 to $12.50, but mills are taking only a limited quantity on contract. Railroads received fairly satisfactory bids on their lists which closed the past week. Foundry grades of scrap are moving sluggishly.

We quote dealers' buying prices, f.o.b. cars, Cincinnati:

Per Gross Ton	
Heavy melting steel	$12.00 to $12.50
Scrap rails for melting	12.50 to 13.00
Short rails	17.00 to 17.50
Relaying rails	27.00 to 27.50
Rails for rolling	13.50 to 14.00
Old car wheels	12.50 to 13.00
No. 1 locomotive tires	16.50 to 17.00
Railroad malleable	15.50 to 16.00
Agricultural malleable	14.00 to 14.50
Loose sheet clippings	7.50 to 8.00
Champion bundled sheets	9.50 to 10.00
Per Net Ton	
Cast iron borings	7.00 to 7.50
Machine shop turnings	6.50 to 7.00
No. 1 machinery cast	17.50 to 18.50
No. 1 railroad cast	14.00 to 14.50
Iron axles	20.50 to 21.00
No. 1 railroad wrought	9.00 to 9.50
Pipes and flues	7.50 to 8.00
No. 1 busheling	9.00 to 9.50
Mixed busheling	7.50 to 8.00
Burnt cast	7.50 to 8.00
Stove plate	9.00 to 9.50
Brake shoes	9.50 to 10.00

Warehouse Prices, f.o.b. Cincinnati

	Base per Lb.
Plates and structural shapes	3.40c.
Bars, mild steel or iron	3.30c.
Reinforcing bars	3.30c.
Hoops	4.00c. to 4.25c.
Bands	3.95c.
Cold-finished rounds and hexagons	3.85c.
Squares	4.35c.
Open-hearth spring steel	4.75c. to 5.75c.
No. 28 black sheets	4.10c. to 4.30c.
No. 10 blue annealed sheets	3.60c.
No. 28 galvanized sheets	5.25c. to 5.40c.
Structural rivets	3.75c.
Small rivets	65 per cent off list
No. 9 annealed wire, per 100 lb	$3.00
Common wire nails, base per keg	2.95
Cement coated nails, base per 100-lb. keg	3.15
Chain, per 100 lb	7.55
	Net per 100 Ft.
Lap welded steel boiler tubes, 2-in	$18.00
4-in.	38.00
Seamless steel boiler tubes, 2-in	19.00
4-in.	39.00

FABRICATED STEEL

Projects Totaling More Than 128,000 Tons Set New Record for Year—Awards Smaller

The total tonnage of projects that have appeared in the past week, 128,700 tons, is more than triple the tonnage reported a fortnight ago, which was the largest of any previous week this year. The greater part of this week's large total is contributed by two projects, 70,000 tons in a 42-story Agricultural Mart for Chicago and 23,000 tons for 85 oil tanks for the Union Oil Co., Los Angeles. Another fair-sized tonnage of the week is 8000 tons for a hotel in Pittsburgh. Awards of a little more than 23,000 tons reached a smaller total than in the previous week. The largest was about 2800 tons for a loft building in New York.

BOSTON, 1450 tons, Boston Consolidated Gas Co. office building, to New England Structural Co.

BOSTON, 650 tons, Home for Incurables, to Palmer Steel Co.

WESTFIELD, MASS., 300 tons, building for the Foster Machine Co., to McClintic-Marshall Co.

MILBURY, MASS., 350 tons, transmission towers for New England Power Construction Co., to American Bridge Co.

ALBANY, N. Y., 200 tons, building for International Harvester Co., to Eastern Bridge & Structural Co.

NEW YORK, 1700 tons, in these jobs reported by members of the Structural Steel Board of Trade: Apartment hotel at 2-10 East Eighty-sixth Street, to A. E. Norton, Inc., and a Masonic Temple at 147 West 144th Street, to Lehigh Structural Steel Co.

NEW YORK, 2800 tons, loft building on West Thirty-eighth Street, to George A. Just Co.

NEW YORK, 1500 tons, Columbia-Presbyterian Medical Center, to Taylor-Fichter Steel Construction Co.

NEW YORK, 600 tons, apartment hotel, 687 Lexington Avenue, to Paterson Bridge Co.

BROOKLYN, 600 tons, high school for St. John's College, to Hinkle Iron Works.

SOUTH ORANGE, N. J., 800 tons, South Orange-Maplewood high school, to Selbach-Meyer Co.

NEWARK, N. J., 1600 tons, Essex County Hall of Records, to McClintic-Marshall Co.

ROCHESTER, N. Y., 900 tons, building for Eastman Kodak Co., to American Bridge Co.

ORLANDO, FLA., 250 tons, purifier and 2 tanks, to Stacey Mfg. Co.

CINCINNATI, 160 tons, addition to Good Samaritan Hospital, to General Iron Works, Cincinnati.

AKRON, OHIO, 600 tons, Akron Pure Milk Co., factory, to Burger Iron Co.

PONTIAC, MICH., 115 tons, Congregational Church, to Flint Structural Steel Co.

SAGINAW, MICH., 310 tons, Baker-Perkins Co., factory building, to Flint Structural Steel Co.

HIGHLAND PARK, MICH., 125 tons, Kresge store, to Flint Structural Steel Co.

GARY, IND., 600 tons, Knights of Columbus building, to American Bridge Co.

FAIRFAX, IOWA, 100 tons, 160-ft. truss span, to Pittsburgh-Des Moines Steel Co.

ST. PAUL, MINN., 200 tons, power house for Brown & Bigelow, to St. Paul Foundry Co.

STILLWATER, MINN., 200 tons, gas holder, to Stacey Mfg. Co.

ST. LOUIS, 150 tons, recreational building, Audrey Realty Co., to Atlas Iron Works, St. Louis.

BUTTE, MONT., 1800 tons, Anaconda Copper Co., to Wisconsin Bridge & Iron Co.

SAN FRANCISCO, 575 tons, Kress Building, to Minneapolis Steel & Machinery Co.

SAN FRANCISCO, 350 tons, apartment, Jackson and Steiner Streets, to Pacific Rolling Mill Co., Inc.

SAN FRANCISCO, 200 tons, plates for Southern Pacific Co., to unnamed Eastern mill.

SAN FRANCISCO, 1000 tons, for stock, Atlantic, Gulf & Pacific Co., to unnamed Eastern Mill.

LOS ANGELES, 1800 tons, addition to Roosevelt Building, to Llewellyn Iron Works.

LOS ANGELES, 1500 tons, office building Eighth and Main Streets, to Union Iron Works.

LOS ANGELES, 600 tons, two 80,000-bbl. tanks for Wilshire Oil Co., to Lacy Mfg. Co., instead of to Llewellyn Iron Works as previously reported.

MONTE BELLO, CAL., 300 tons, bridge, to unnamed fabricator.

LONGVIEW, WASH., 279 tons, two bridges for the Longfell Lumber Co., to unnamed fabricator.

Structural Projects Pending

Inquiries for fabricated steel work include the following:

PITTSFIELD, MASS., 200 tons, building for General Electric Co.

NEW YORK, 3500 tons, Theodore Roosevelt High School in the Bronx.

PHILADELPHIA, 300 tons, Brown Building.

WASHINGTON, 500 tons, addition to Bennings power house; Stone & Webster, general contractors.

PHILADELPHIA, 600 tons, apartment buildings, 4028 Walnut Street, and Oakland and Oxford Streets, about 300 tons each.

PHILADELPHIA, 800 tons, Northeast sewage disposal plant, all bids rejected, new bids this week.

BUFFALO, 300 tons, New York Central Railroad bridge.

PITTSBURGH, 8000 tons, Pittsburgh-Pennsylvania Hotel; general contract reported let to Dwight P. Robinson, Inc.

WEIRTON, W. VA., 3000 to 4500 tons, for 20 to 30 river barges for Weirton Steel Co.

MORTONVILLE, KY., 200 tons, power station.

CHICAGO, 70,000 tons, 42-story Agricultural Mart.

NORTH DAKOTA, 1000 tons, State highway bridge.

LOS ANGELES, 23,000 tons, 50 80,000-bbl. and 35 55,000-bbl. tanks for Union Oil Co.; immediate bids, material to be furnished from stock if possible.

SAN FRANCISCO, 3200 tons, for pipe line in Manila, P. I., Atlantic Gulf & Pacific Co.

SAN FRANCISCO, 1400 tons, barge for Imperial Oil Co. of Canada, Standard Oil Co. subsidiary; British bids have been requested.

SAN FRANCISCO, 100 tons, Otis Elevator Co.

SAN FRANCISCO, 200 tons, unnamed inquiry for barge.

GRASS VALLEY, CAL., 200 tons, pipe line for Nevada County Irrigation District; bids May 1.

HONOLULU, H. I., 800 tons, Pier No. 11, Board of Harbor Commissioners; bids to be taken in San Francisco about May 25.

RAILROAD EQUIPMENT

Only One Sizable Car Order Reported—Inquiry Issued for 20 Locomotives

But one sizable car inquiry has appeared in the past week, that of the Atlantic Coast Line for 1000 gondola cars. The purchase of 170 gondola cars by the Central Railroad of New Jersey is reported. In the locomotive field, the Delaware, Lackawanna & Western has closed on 25 with the American Locomotive Co. and the Illinois Central is in the market for 20.

The Central Railroad of New Jersey has placed 170 gondola cars with the Bethlehem Steel Corporation.

The Boston Elevated Railway has placed an order for 75 car bodies with the Laconia Car Co. and 25 bodies with the Wason Mfg. Co.

The Atlantic Coast Line is inquiring for 1000 gondola cars.

The Delaware, Lackawanna & Western has purchased 25 locomotives from the American Locomotive Co.

The Illinois Central is inquiring for 20 locomotives.

Proposed Memorial to John Edson Sweet

ITHACA, April 16.—As a memorial to John Edson Sweet, a leading spirit in founding the American Society of mechanical engineers, first head of the college of engineering at Cornell University, and inventor of the straight line engine, friends of Cornell University are raising a fund to endow a professorship at Cornell to be known as the Sweet memorial professorship. The endowment plan happens to coincide to some extent with the sesquicentennial celebration in Philadelphia, in the fact that the straight line engine invented by Professor Sweet was used at the 1876 centennial to drive the first dynamo ever made in the United States. This dynamo was constructed at Cornell and (the dynamo) is still in use in a Cornell laboratory.

REINFORCING STEEL

Viaduct at Key West Accounts for About Half of the Inquiries Covering New Projects

Of the 22,000 tons of reinforcing steel bars for new projects reported during the week, 11,000 tons is for a viaduct at Key West, Fla., and 7000 tons for an Agricultural Mart at Chicago. Awards were for the most part in lots of a few hundred tons each, the total being about 5200 tons.

NEW YORK, 100 tons, Mount Sinai Hospital, to Truscon Steel Co.

MAPLEWOOD, N. J., 140 tons, high school, to Ferro Building Products Co.

WATERBURY, CONN., 100 tons, St. Mary Immaculate School, to Truscon Steel Co.

MIAMI, FLA., 300 tons, Ingraham Building, placed by Turner Construction Co., general contractor with Concrete Steel Co.

NEW YORK, 1600 tons, Bush Terminal warehouse, to Jones & Laughlin Steel Corporation, through J. K. Larkin & Co.

GARY, IND., 150 tons, Knights of Columbus building, to Concrete Steel Co.

CHICAGO, 180 tons, Jewish Peoples Institute, to Joseph T. Ryerson & Son.

CHICAGO, 500 tons, apartment building, Pearson and DeWitt Streets, to Concrete Steel Co.

CHICAGO, 300 tons, addition to Tribune Building, to Truscon Steel Co.

CHICAGO, 250 tons, rail and billet steel, Workingmen's Hotel, to Olney J. Dean & Co.

SPRINGFIELD, ILL., 200 tons rail steel, Illinois State road work, to Olney J. Dean & Co.

EAST ST. LOUIS, ILL., 300 tons, East St. Louis Hotel, to Concrete Engineering Co.

ST. LOUIS, 500 tons, Fashion Park Square building, to Laclede Steel Co., St. Louis.

OAKLAND, CAL., 475 tons, Lawrence Warehouse, Water and Webster Streets, to Gunn, Carle & Co., San Francisco.

SAN FRANCISCO, 100 tons, apartment building, Taylor and O'Farrell Streets, to Badt-Falk & Co., San Francisco.

Reinforcing Bars Pending

Inquiries for reinforcing steel bars include the following:

FLUSHING, N. Y., 120 tons, warehouse, O'Neil Supply Co.

JERSEY CITY, N. J., 140 tons, Y. W. C. A. building.

CHICAGO, tonnage unstated, superstructure for Midwest Athletic Club; Michaelsen & Rognstad, architects.

CHICAGO, tonnage unstated, 16-story apartment building at Ontario and Rush Streets; F. J. Meles, architect.

MILWAUKEE, Shrine mosque for Tripoli Temple, 250 tons; plans ready April 20, Clas, Shepherd & Clas, Milwaukee, architects.

CHICAGO, 800 tons, addition to Cook County Hospital; Great Lakes Construction Co., general contractor.

CHICAGO, 140 tons, American Bank Note Co. building; Ralph Sollitt, general contractor.

CHICAGO, 200 tons, Western Avenue pumping station.

CHICAGO, 7000 tons, Agricultural Mart; George C. Nimmons Co., architect.

CHICAGO, 500 tons, Schnetnitz Building; general contractor, McLennan Construction Co.

CHICAGO, 550 tons, McCormick cooperative apartments; general contractor, McLennan Construction Co.

ST. LOUIS, 500 tons, Penrose-Kings Highway viaduct; Goldsmith, Mueller & Co., St. Louis, general contractors.

KEY WEST, FLA., 11,000 tons, viaduct.

MEMPHIS, TENN., 1000 tons, building for Westinghouse Electric & Mfg. Co.

A development scheme involving expenditure above $10,000,000 will be launched in the Flin Flon mining area of Northern Manitoba, a short distance from Winnipeg, as soon as a railroad line is built into the area and tests for treatment of ore are completed, according to a statement issued by J. P. Watson, head of the Mining Corporation, of Canada. Plans of the company provide for a town site and a smelter with capacity of 2000 tons of ore a day. It is proposed also to develop 30,000 hp. on the Churchill River.

TO ASSESS SPECIAL DUTY

Pig Iron Imports from India May Bear Burden Apportioned to Indian Export Bounty

WASHINGTON, April 20.—A countervailing duty on imports of pig iron from the Tata Iron & Steel Co. in India was announced in a ruling made public yesterday by Assistant Secretary of the Treasury L. C. Andrews. The duty is to be applicable from the date of the decision, April 16. Therefore it will be assessed against imports which may now be en route to the United States from the Tata Iron & Steel Co., but will not apply to imports received previous to that date. The action is based on the fact that the Indian Government pays a bounty of 12 gold rupees per ton on 70 per cent of the steel ingots produced by the company. This was held to constitute an indirect bounty on pig iron within the meaning of Section 303 of the tariff act.

There is considerable speculation as to what the duty will be. The method of arriving at it has not been decided upon. Indications are that the duty on the pig iron will be somewhat less than the bounty paid on the steel ingots, because of the difference in cost of producing the ingots and the pig iron. Also it is a question whether the duty will be based on 70 per cent of the pig iron imported into the United States from the Tata works. Should this basis be used, the assessment on the pig iron would apparently be less than 8.4 rupees. At present exchange a gold rupee is valued at approximately 37c., so that the duty would be below $3.11 per ton.

Suggested Amount Would Suffice

It is claimed, however, that this speculative countervailing duty, together with the regular duty of 75c. per ton, making a total of $3.86, would be sufficient to check greatly, if not entirely stop, imports of pig iron from the Tata works, which has been the source of large incoming shipments along the Atlantic seaboard. Moreover, it is contended that the uncertainty of the amount of the duty would be effectual in checking if not entirely stopping trading in pig iron imported from the Tata works, the only concern in India which receives the bounty on steel ingots.

Coming on the heels of this is a hearing taking place today before the Tariff Commission on the application of Eastern merchant furnace interests for an increase of the duty on pig iron under the flexible provision. This provision permits the President to proclaim a maximum increase of 50 per cent. Should this be done the regular duty would be increased by 37.5c. to $1.125 per ton.

FOR PIG IRON TARIFF

Hearing On Application for Increase Emphasizes Broad Effect of Present Imports

WASHINGTON, April 20.—With virtually all except Southern merchant pig iron producers of the country represented, hearings were held here today before the tariff commission on the application of Eastern merchant interests for an increase of 50 per cent under the flexible provision of the tariff act in the duty on pig iron.

The broad scope of the proceeding developed when the American Pig Iron Association, through Col. Frank B. Richards, M. A. Hanna Co., Cleveland, asked for and was given the right to join the hearing on behalf of the applicant. In his preliminary statement, in which he announced pig iron interests from important producing sections would present statements, Mr. Richards said that every ton of pig iron imported affected the production of merchant iron in this country throughout its various sections. The hearing related principally to imports from India. No evidence was submitted by importing interests. Briefs are to be filed by May 5 with the commission.

As others who followed, Mr. Richards said that an increase of 50 per cent over the present duty of 75c. per ton, while amounting to only 37.5c., was small but vital. Others indicated that a higher tariff duty will be asked later through legislation.

John W. Logan, Alan Wood Iron & Steel Co., pointed out that the merchant iron actually represents 35 per cent of the total production and is the tonnage which has to meet foreign competition. The maximum post-war annual production in India was placed by Mr. Logan at 880,000 tons rather than 593,290 tons, given in the report of the tariff commission. The report itself, however, was strongly approved by Mr. Logan and the other witnesses for its accuracy and thoroughness. Mr. Logan said the Eastern furnaces had lost the markets in New England on account of imports.

Imports Supplying 20 Per Cent of Atlantic District

Interesting figures showing the market for pig iron in the so-called Atlantic district, roughly bounded by Harrisburg, Pa., on the west; Chester, Pa., on the south, and Hokendauqua, Pa., on the north, were presented by Robert C. Lea, Robesonia Iron Co., with furnace at Robesonia. He classified the tonnages marketed in this district for both pre-war and post-war years as between steel works stacks marketing iron, merchant furnaces and imports, to show the market loss suffered by the merchant interests in the Atlantic district. Mr. Lea said that during the years 1913-14-15, the average annual tonnages marketed from these sources in the district were as follows: Steel works furnaces, 529,000 tons; merchant furnaces, 1,067,000 tons; imports, 30,000 tons, a total of 1,626,000 tons. The annual average for the years 1922-23-24-25, was divided as follows: Steel works furnaces, 714,000 tons; merchant furnaces, 707,000 tons; imports, 351,000 tons, a total of 1,772,000 tons.

In the pre-war period, he pointed out, the imports represented 2 per cent of the total as against 20 per cent during the post-war period, with a loss to the merchant furnaces of 300,000 tons to the advantage of the imported iron. Also, it showed, he said, the real competition is with imported and not domestic steel works iron. It was further stated that the figures disclose the fact that the market in the Atlantic district has increased. Mr. Lea said that there are 42 merchant furnaces and four or five steel works stacks, practically operated as merchant furnaces, in the Atlantic district, and that of the total only nine or ten are operating, with no prospect of improvement near.

Leon Thomas, president Thomas Iron Co., described the depressed conditions in the merchant furnace industry in the East due to inability of domestic makers to compete with low-priced foreign iron. Similar testimony was given by Leonard Peckitt, president Replogle Steel Co.

W. S. Rogers, Rogers, Brown Iron Co., Buffalo, said the Buffalo district is affected both directly and indirectly by imports, and producers in that district are forced to seek markets to the west.

The Ohio furnaces are affected by the forcing of Eastern furnaces into the Western markets, according to a statement by Ralph H. Sweetser, American Rolling Mill Co., speaking for the Southern Ohio Pig Iron and Coke Association.

C. A. Bertie, assistant to the president of the Virginia Iron, Coal & Coke Co., spoke of depression due to imports and commended the tariff commission report. Julian Greenstreet, superintendent Olney Foundry Co., Philadelphia, declared that the foreign iron is no better than domestic iron.

The New York Iron and Steel Association, John B. Carse, Odgen & Wallace, president, will hold its annual dinner at the Waldorf-Astoria Hotel, New York, Saturday, April 24.

NON-FERROUS METAL MARKETS

The Week's Prices

Cents per Pound for Early Delivery

	Apr. 14	Apr. 15	Apr. 16	Apr. 17	Apr. 19	Apr. 20
Lake copper, New York	14.12½	14.12½	14.12½	14.12½	14.12½	14.12½
Electrolytic copper, N. Y.*	13.75	13.75	13.75	13.75	13.75	13.75
Straits tin, spot, New York	64.00	64.12½	63.75	....	63.37½	62.50
Lead, New York	8.00	8.00	8.00	8.00	7.85	7.85
Lead, St. Louis	7.65	7.65	7.65	7.65	7.50	7.50
Zinc, New York	7.50	7.45	7.35	7.35	7.37½	7.30
Zinc, St. Louis	7.15	7.10	7.00	7.00	7.02½	6.95

*Refinery quotation; delivered price ¼c. higher.

NEW YORK, April 20.—Marking time is the attitude of consumers in most of the markets. The coal situation in England has unsettled the markets over there with sizable recessions in all metals today, sympathetically affecting all markets here. Copper is easier in tone, tin is lower, lead has declined and so has zinc.

Copper.—There has been fairly good buying of electrolytic copper during the past week, with the market quiet yesterday and today. The 14c. level was easily established a week ago after the publication of the March statistics, with most of the buying done at that level. Today 14c., delivered, is still the quotation of all producers with no pressure to sell in evidence. Consumers are waiting the turn which will in some measure be determined either up or down by the decision on coal in Great Britain, which, it is understood, is being made today. Good buying by Germany, in particular, and by France and England, is reported for last week. Lake copper is quoted at 14.12½c., delivered.

Tin.—For the week ended Saturday, April 17, sales were moderate, totals being estimated at about 750 tons, with both dealers and consumers participating, the former taking the bulk. One importer sold 100 tons of future delivery below the market. Consumers are believed to be fully covered for April and comfortably so for May. There have been fair sales for June and July arrival. Yesterday the market was almost stagnant, but today fair sales have been made, with spot Straits quoted at 62.50c., New York. In London today spot standard tin was quoted at £279, future standard at £267 5s. and spot Straits at £287, all about £3 to £5 per ton less than a week ago. The Singapore price today was £276 15s. Arrivals so far this month have been 3745 tons, with 5595 tons reported afloat.

Lead.—The leading interest again reduced its price April 19 from 8c. to 7.85c., New York, and the outside market immediately met this level. The independent producers are quoting 7.50c. to 7.60c., St. Louis, with the New York quotation at 7.85c., on a par with that of the leading interest. Good buying is reported and it remains to be seen whether there will be still further purchases on the decline.

Zinc.—The market is exceedingly quiet and somewhat weaker today, due to lower prices in London. On the advance to as high as 7.15c., St. Louis, during the week fairly good sales were made, most of them at 7c. to 7.10c. Since then demand has tapered off until the market has returned to the level of a week or so ago, 7c., St. Louis, and today prime Western zinc is quoted at 6.95c., St. Louis, or 7.30c., New York. Rumors of shading this by second hands to as low as 6.90c. are current.

Nickel.—Ingot nickel in wholesale lots is quoted at 35c. with shot nickel at 36c. and electrolytic nickel at 39c. per lb.

Antimony.—The market is firm but quiet, with Chinese metal for spot and early delivery quoted at 17.50c. to 17.75c., New York, duty paid. Dealers have been fairly active buyers. Metal for May-June arrival is quoted at 16.50c. to 16.75c., with April-May shipment from China at 15c.

Aluminum.—Virgin metal, 98 to 99 per cent pure, is obtainable as ingots at 27c. to 28c. per lb., delivered.

CHICAGO, April 20.—Demand for lead, tin and copper shows improvement and prices are higher. The price of zinc is up slightly and the market is steady, although there has been some pressure to sell. Antimony is steady and the market is unchanged. Prices

Metals from New York Warehouse

Delivered Prices per Lb.

Tin, Straits pig	64.75c. to 65.50c.
Tin, bar	68.25c. to 68.75c.
Copper, Lake	15.50c.
Copper, electrolytic	15.25c.
Copper, casting	15.00c.
Zinc, slab	8.25c. to 8.75c.
Lead, American pig	9.00c. to 10.00c.
Lead, bar	11.25c. to 12.25c.
Antimony, Asiatic	20.00c. to 21.00c.
Aluminum, No. 1 ingots for remelting (guaranteed over 99 per cent pure)	30.00c. to 30.50c.
Babbitt metal, commercial grade	30.00c. to 35.00c.
Solder, ½ and ½ guaranteed	41.00c.

Metals from Cleveland Warehouse

Delivered Prices per Lb.

Tin, Straits pig	69.00c.
Tin, bar	71.00c.
Copper, Lake	15.00c.
Copper, electrolytic	15.00c.
Copper, casting	14.00c.
Zinc, slab	9.00c.
Lead, American pig	9.00c. to 9.50c.
Antimony, Asiatic	23.50c.
Lead, bar	11.25c.
Babbitt metal, medium grade	23.50c.
Babbitt metal, high grade	72.00c.
Solder, 50-50	41.00c.

Rolled Metals from New York or Cleveland Warehouse

Delivered Prices, Base per Lb.

Sheets—	
High brass	18⅞c. to 19⅞c.
Copper, hot rolled	22½c. to 23½c.
Copper, cold rolled, 14 oz. and heavier	24¾c. to 25¾c.
Seamless Tubes—	
Brass	23½c. to 24½c.
Copper	24¼c. to 25¼c.
Brazed Brass Tubes	26¾c. to 27⅞c.
Brass Rods	16⅝c. to 17⅝c.

From New York Warehouse

Delivered Prices, Base per Lb.

Zinc sheets (No. 9), casks	13.25c.
Zinc sheets, open	13.75c.

Non-Ferrous Rolled Products

Mill prices in brass, bronze and copper products are unchanged. Zinc and lead sheets remain unchanged since the reductions made four weeks ago.

List Prices Per Lb., f.o.b. Mill

On Copper and Brass Products. Freight Up to 75c. Per 100 Lb. Allowed on Shipments of 500 Lb. or Over

Sheets	
High brass	18.87½c.
Copper, hot rolled	22.50c.
Zinc	11.75c.
Lead (full sheets)	11.75c.
Seamless Tubes	
High brass	23.50c.
Copper	24.25c.
Rods	
High brass	16.62½c.
Naval brass	19.37½c.
Wire	
Copper	15.75c.
High brass	19.37½c.
Copper in Rolls	21.37½c.
Brazed Brass Tubing	26.87½c.

Aluminum Products in Ton Lots

The carload freight rate is allowed to destinations east of the Mississippi River and also allowed to St. Louis on shipments to destinations west of that river.

Sheets, 0 to 10 gage, 3 to 30 in. wide	37.50c.
Tubes, base	48.00c.
Machine rods	34.00c.

of old metals are holding and a little more activity developed late in the week. We quote, in carload lots: Lake copper, 14.25c.; tin, 65c.; lead, 8c.; zinc, 7.15c.; in less than carload lots, antimony, 20c. On old metals we quote copper wire, crucible shapes and copper clips, 10.25c.; copper bottoms, 9.25c.; red brass, 9c.; yellow brass, 8c.; lead pipe, 6.50c.; zinc, 5c.; pewter, No. 1, 37c.; tin foil, 44c.; block tin, 52c.; aluminum, 19.50c.; all being dealers' prices for less than carload lots.

Rolled Metals, f.o.b. Chicago Warehouse

	Base per Lb.
Sheets—	
High brass	18⅞c. to 19⅞c.
Copper, hot rolled	22½c.
Copper, cold rolled, 14 oz. and heavier	24¾c.
Zinc	12½c.
Lead, wide	11.08c.
Seamless Tubes—	
Brass	23½c. to 25c.
Copper	24¼c. to 25¾c.
Brazed Brass Tubes	26⅞c. to 29¼c.
Brass Rods	16⅝c.

Old Metals, Per Lb., f.o.b. New York

The buying prices represent what large dealers are paying for miscellaneous lots from the smaller accumulators, and the selling prices are those charged consumers after the metal has been properly prepared for their uses.

	Dealers' Buying Prices	Dealers' Selling Prices
Copper, heavy crucible	11.75c.	13.25c.
Copper, heavy and wire	11.50c.	12.75c.
Copper, light and bottoms	9.50c.	11.00c.
Brass, heavy	7.00c.	9.00c.
Brass, light	6.25c.	7.75c.
Heavy machine composition	8.75c.	10.00c.
No. 1 yellow brass turnings	8.25c.	9.00c.
No. 1 red brass or composition turnings	8.00c.	9.00c.
Lead, heavy	6.50c.	7.00c.
Lead, tea	5.00c.	6.00c.
Zinc	4.00c.	4.75c.
Cast aluminum	18.00c.	19.50c.
Sheet aluminum	18.00c.	19.50c.

LARGER DIVIDENDS ASKED

Steel Corporation Annual Meeting Brings Sharp Discussion—Excessive Cost of Plant Replacement Cited

STOCKHOLDER discussion at the annual meeting of the United States Steel Corporation, held in Hoboken, N. J., on April 19, centered around the desire for larger dividends and slower accumulation of a huge surplus. Judge Gary's own suggestion that "in the natural course of events it will probably soon be time for some of us to say 'good bye,'" was widely interpreted to mean that he might, at no distant date, relinquish the post of chairman, which he has held for the full quarter-century of the corporation's existence. A portion of his remarks follows:

It is not uncommon for the accounting department and the treasury department to sound a note of warning as to the possible need of securing more cash to meet immediate future necessities. Sometimes the finance committee, in comparing budgets with cash resources, is apprehensive. It costs now about 2½ times as much to build or buy anything in our line as it did a few years since. Depreciation allowances established on basis of values when costs were lower do not now provide for rebuilding as they used to do. And we are compelled to rebuild, at a much higher investment cost, many new plants and facilities, and acquire new property, to take the places of those that have become obsolescent, because worn out or behind present standards or exhausted.

During the past twelve years, since Jan. 1, 1914, our steel ingot and casting capacity has increased by 19.7 per cent, while that of all our competitors has increased 68 per cent. As a result we now have about 40 per cent of the productive capacity of the country, compared with 47.9 per cent at the close of 1913, equal to a loss of 7.9 per cent of the entire capacity of the country. This is not right nor fair to our stockholders. Properly to take care of our natural and legitimate customers, and to protect our stockholders generally, we must expend large sums from year to year. I wish we could reasonably expend less to keep our properties and business in good condition; but we cannot. I would like to see larger dividends, if practicable and proper, but what have personal or individual interests to do with our subject, unless the whole body of stockholders is at the same time protected?

Stock Dividend May Come

However, the time may come when it would be legal, just and proper toward all interests, and safe to the cash requirements of the Steel Corporation, to issue additional common stock as a stock dividend to the common shareholders against a part of the new improvements heretofore charged to capital expenditures. If this were done it would add to the amount of cash dividends declared on common stock, and might possibly in times of depression interrupt their continuity. It should not be done without painstaking and conscientious consideration. It cannot be done with safety at present.

Our need for large liquid assets is great; we must be prepared for emergencies; business fluctuates; selling prices are uncertain. Competition and fairness to customers require the best and latest improvements in facilities and methods. Machinery wears out rapidly; and new and better designs compel replacements and substitutions.

Business Outlook

We are at present booking about 28,500 tons of steel per day, compared with 35,361 tons at the same date last month, and 17,179 at same date last year. We are shipping 48,141 tons per day against 51,142 tons at same date last month, and 46,956 tons same date last year. Our total finishing capacity is about 52,000 tons per day.

Growth of the corporation and its business were shown in a set of figures of which the principal items follow:

	April 1, 1901	Dec. 31, 1925
Capital stock, total	$1,018,968,544	$869,157,319
Bonds, mortgages, etc.	384,413,679	509,479,578
Total	$1,403,382,223	$1,378,636,897
Net working capital	134,224,089	444,251,459
Capacities:		
Pig iron, tons	7,440,000	18,940,000
Steel ingots	9,430,000	22,750,000
Finished products	7,923,000	16,252,000
For the year..	1902	1925
Gross business	$560,510,479	$1,406,505,195
Annual taxes	2,391,465	50,923,191
Annual payroll	120,528,343	456,740,355
Number of employees	168,127	249,833
Number of stockholders	43,019	166,350

Business Analysis and Forecast

(*Concluded from page* 1149)

Also the value of contemplated construction fell sharply in March, allowing for seasonal variation.

A recent survey made by the New York University Bureau of Business Research among manufacturers in the Northeastern section of the country shows that 90 per cent contemplated no sizable building operations during the next two years, and 80 per cent plan no building at all. This indicates that little industrial construction work is probable.

The fourth chart also shows that the long upward trend of money rates between August, 1924, and January, 1926, has ceased. An easier money market lies ahead due to the slackening in business, declining commodity prices, increased gold supply, and higher bank reserve ratios. It is possible that the current unfavorable balance in our foreign trade may cause some outflow of gold, but this does not now seem to be an important factor.

The schedule of the next installments of Doctor Haney's analyses follows: May 13—Activity in consuming industries; May 20—Position of iron and steel producers; May 27—The general business outlook.

PERSONAL

Taylor Allderdice, who on April 19 became president of the National Tube Co., Pittsburgh, is succeeded by P. C. Patterson as vice-president in charge of operations. G. P. McNiff succeeds to the position Mr. Patterson has held, that of assistant vice-president.

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John W. Guay, formerly sales engineer Fort Pitt Steel Casting Co., McKeesport, Pa., has been appointed works manager, and H. F. Stratton, formerly in charge of the pattern, mold and core department, has been named superintendent. Mr. Guay's appointment marks the culmination of 18 years' diversified experience with

JOHN W. GUAY

H. F. STRATTON

the company in the sales and operating departments. He was for several years in the mechanical department of the Pennsylvania Railroad, before going with the Fort Pitt company in 1908. Mr. Stratton is a graduate of Purdue University, with the degree of mechanical engineer. Before joining the company in 1920 he was for several years connected with the Isaac G. Johnson Co., Spuyten Duyvil, New York.

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Avery C. Adams has been appointed assistant general manager of sales, Trumbull Steel Co., Warren, Ohio, succeeding Arthur M. Long, who resigned early in April, as noted in these columns on April 15. Mr. Adams has been connected with the Trumbull Steel Co. for seven years and recently has been district sales manager of the home territory.

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A. W. Gregg, foundry superintendent, Bucyrus Co., South Milwaukee, Wis., has been promoted to general superintendent of that plant. Mr. Gregg, a native of Chicago, was graduated from Purdue University in 1904. In 1905 he became associated with the Bucyrus Co. at South Milwaukee as chemist and metallurgist. From that position he advanced to foundry superintendent, remaining with the Bucyrus Co. until 1917. He was subsequently foundry superintendent of the Whiting Corporation, Harvey, Ill., later returning to the Bucyrus Co. in the same capacity. N. R. Knox, assistant foundry superintendent, has been appointed foundry superintendent to succeed Mr. Gregg.

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M. C. Booze has resigned as secretary, American Refractories Institute, 2202 Oliver Building, Pittsburgh, and Miss Dorothy A. Texter, who has been Mr. Booze's assistant, has been appointed to succeed him. Mr. Booze continues as senior fellow, American Refractories Institute of Industrial Research, University of Pittsburgh, and it was the demands of that position that led him to relinquish the secretaryship.

E. W. Mudge, president, E. W. Mudge & Co., Pittsburgh, has been appointed a member of the City Planning Commission.

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C. G. Madson has been appointed superintendent, Acklin Stamping Co., Toledo, making pressed metal parts. Mr. Madson has been associated with the Studebaker, Chrysler and Briggs organizations.

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Charles M. Schwab was one of four men receiving the honorary degree of doctor of laws at the fiftieth anniversary of the founding of Juniata College, at the exercises in Huntingdon, Pa., on April 17.

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James H. Dunbar has been appointed superintendent of both the Monessen and Allenport plants, Pittsburgh Steel Products Co. He has been heretofore superintendent only of the Monessen plant. J. D. Case, formerly assistant superintendent, Monessen plant, has been appointed superintendent of that plant.

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George T. Ramsey has been appointed by United Alloy Steel Corporation, Canton, Ohio, maker of U-Loy steels and Toncan metal, as railroad department representative in the East. Mr. Ramsey will make his headquarters at the company's offices in the Pershing Square Building, New York.

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W. F. Prince has been appointed equipment engineer for J. W. Paxson Co., foundry equipment manufacturer, Philadelphia. Mr. Prince, a leading foundry expert, has had experience in brass and non-ferrous metal foundry practice for many years. He will devote his time to consulting with foundry owners and executives in connection with foundry problems of every kind.

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V. A. Root, who has been associated with the National Automatic Tool Co., Richmond, Ind., as assistant sales manager for the past 4½ years, has resigned and will become associated with the W. F. & John Barnes Co., Rockford, Ill., as of May 1.

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Leo A. Dumser has joined the Kearney & Trecker Corporation, Milwaukee, in the capacity of sales engineer. He will specialize in following up inquiries and sales for production service department. Mr. Dumser is a graduate of the University of Illinois. From 1919 to 1922 he was Wisconsin representative of the Barber-Colman Co., and from 1922 to 1926 served as a sales engineer, specializing in cutting tools, for the Western Iron Stores Co., Milwaukee.

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Raymond M. Alvord, electrical engineer, has been appointed manager of the San Francisco office of the General Electric Co. Mr. Alvord has been with the company since his graduation from college in 1904, and has served in various positions, including his most recent one of sales manager of the San Francisco office. He has been active in developing the "home electrical" idea on the Pacific Coast. He is a member and a former director of the San Francisco Rotary Club and a past president of the San Francisco Sales Managers' Association.

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John Williams, who since 1919 has been in charge of personnel and welfare work at the Pacific Coast Steel Co., San Francisco, has assumed charge of the public relations department of the company, following the resignation of C. H. Tallant. Mr. Williams was formerly a sheet mill worker at Carnegie, Pa., and from 1897 to 1919 he was international president of the Amalgamated Association of Iron, Steel and Tin Workers, with headquarters at Pittsburgh.

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George A. Richardson, manager, technical department, Bethlehem Steel Co., delivered a lecture April 15 at the Palace Hotel, San Francisco, on the manufacture of steel products. The lecture was illustrated by motion pictures showing the different processes in the production of iron and steel from the mining of the ore to the loading of various finished steel products at the mill for shipment.

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Calvin P. Hensley and Thomas W. Bell, managers

of the San Francisco and Los Angeles offices respectively of the Jones & Laughlin Steel Corporation, are leaving San Francisco April 21 for Pittsburgh, and will return to the Pacific Coast about May 5.

A. C. Williams, London representative of S. Guiterman & Co., Ltd., is making a visit in New York, located at the American office, Guiterman Co., Inc., 35 South William Street. Mr. Williams is here to negotiate with manufacturers with a view to arranging a few more exclusive agencies with manufacturers seeking an outlet in Great Britain.

E. W. Martin has been appointed district manager in the Chicago office Triumph Electric Co., Cincinnati, located at 21 East Van Buren Street, Chicago. Mr. Martin has been connected with the Westinghouse Electric & Mfg. Co. in various capacities, and is an electrical engineer of wide experience in the motor field.

Harold L. Stevens, formerly sales manager, Central Iron & Steel Co., Harrisburgh, Pa., and previously New England representative of the Lackawanna Steel Co., is associated with the Avesta Steel Co. of Sweden, with headquarters with the A. Johnson Co., 17 Battery Place, New York.

Judge James E. Cooper, vice-president, Stanley Works, New Britain, Conn., has returned from a business trip to Germany.

Dr. Richard Moldenke returned from Europe on April 13 after visiting foundries in Norway Sweden, Germany, Czechoslovakia, Switzerland, Italy, France and England.

OBITUARY

Price McKinney

PRICE MCKINNEY, former president of the McKinney Steel Co., Cleveland, who died suddenly on April 13, was for a long time a prominent figure in the iron and steel industry, and for 20 years the dominant factor in the company from which he retired as head a year ago, and which he built up into one of the largest independent steel companies in the United States. Mr. McKinney was 63 years of age. He had been in poor health for a year, and recently had suffered an attack of influenza.

PRICE MCKINNEY

Mr. McKinney's early training was gained as a salesman for Isaac G. Snead & Co., Toledo, manufacturer of furnaces. Later he became connected with the purchasing department of the Hocking Valley Railroad, with which Judge Stevenson Burke, of Cleveland, was affiliated. Judge Burke sent him to Mexico to inspect gold and silver mines. On his return to Cleveland he became associated with James W. Corrigan, Sr., in the firm of Corrigan, Ives & Co., having iron ore mining and vessel interests, and with which Judge Burke also had an interest. This firm had financial difficulties in 1893, and was placed in receivership under Mr. McKinney, who restored it to a strong financial footing. On termination of the receivership, he became an important factor in the organization. Later the name was changed to Corrigan, McKinney & Co., Mr. McKinney being a partner. After Mr. Corrigan's death in 1908, and until Mr. McKinney's retirement in 1925, the latter had practically full control of the business. In 1918 the name was changed to the McKinney Steel Co.

The firm's chief interests in the iron and steel industry up to 1907 were furnaces at Scottdale, Pa., and the Genesee furnace at Charlotte, N. Y. In that year it built a furnace at Josephine, Pa., and leased another in Cleveland. In 1909 the construction of a blast furnace was started in Cleveland, followed by the erection of three others, the fourth being completed in 1916. Mr. McKinney's ambition was to have a complete steelmaking plant at Cleveland, and finishing mill units were planned and construction started under his direction before his retirement. These will be completed near the end of 1926. The company's steel works, including 14 open-hearth furnaces and semi-finishing mills, were placed in operation in 1916. With its ore and coal mines, blast furnaces and coke ovens, the company under Mr. McKinney's management became a most completely integrated independent steel company.

Under the will of James W. Corrigan, Sr., Mr. McKinney became one of the two trustees of his estate. In 1919 James W. Corrigan, Jr., wrested control of his interest in his father's estate from Mr. McKinney, obtaining 40 per cent of the stock, against 30 per cent held by the latter, but for several years remained inactive in the management. About a year ago Mr. Corrigan obtained control of the company by acquiring the stock of E. S. Burke, which gave him nearly 54 per cent of the stock ownership, and organized the McKinney Steel Holding Co., a financing corporation. He then assumed control of the McKinney Steel Co., whereupon Mr. McKinney resigned as president and was succeeded by Mr. Corrigan.

Mr. McKinney was regarded as an unusually shrewd business executive. He devoted close attention to his business, had the reputation of being independent in action and shunned publicity. After his retirement from the presidency of the McKinney Steel Co. he paid little attention to business, although he attended the directors' meetings. His family is socially prominent and he was a member of Kirtland, Country, Chagrin Valley Hunt, Roadside, Rowfant, Tavern and Union clubs of Cleveland.

FRANZ ROESSLER, chairman board of directors Roessler & Hasslacher Chemical Co., New York, died on March 24. In company with the late Jacob Hasslacher, he founded the organization in 1885.

FREDERICK GORDON CARTWRIGHT, nationally known mathematician and electrical engineer, died suddenly, April 10, at the age of 61, in the St. Francis Hospital, San Francisco, following a physical collapse. He was born at Deep Creek, Va., Dec. 22, 1865. He received his early education in Boston, and then attended the Massachusetts Institute of Technology, taking a course there in mechanical engineering in 1881 and 1882. From 1885 until his death he was identified with numerous electrical construction companies and operating plants throughout the United States in the capacity of consulting engineer, director and official. In 1890 he became assistant general manager of the Electrical Improvement Co. of San Francisco.

C. E. RANDALL, president Knox Stove Works, Knoxville, Tenn., died on Wednesday, March 24.

JACOB DIETZ, pioneer Cincinnati machine tool manufacturer, died at his home in that city on April 15, following an illness of several months. He was born in Ripley County, Ind., in 1849, and came to Cincinnati when a young man. Early in life he entered the machine tool business as a member of the firm of Dietz, Shoemaker & Boye Machine Tool Co. Later he founded the Dietz Machine Tool Co., but disposed of the business when he retired 17 years ago.

Machinery Markets and News of the Works

DROP IN SALES

Single Tools Predominate In Current Orders and Inquiries

General Electric List Calls for 15 Tools For Salt Lake City Plant

A TAPERING off in sales is reported from most buying centers. Activity has been confined largely to single machines, the greater part of which have been for use in the general industrial field.

In the Cincinnati district the scale of operations is less than a few months ago, although some manufacturers have several weeks' production ahead of them.

A list of 15 tools has been issued by the General Electric Co., Schenectady, for its Salt Lake City plant. Reconditioned tools will be considered.

The Pennsylvania Railroad is in the market for six machines for its Altoona shops.

Prospect of business lies in new shops to be built by the Central Railroad of New Jersey at Bethlehem, Pa., and by the Wabash Railway Co., at Decatur, Ill. It is also reported that the Rock Island plant of the Moline Plow Co., which was purchased by the International Harvester Co., will be equipped and put on a productive basis at an early date. The latter company has been actively in the market, having placed a number of screw machines during the week.

Bids have been taken by the Boston school commission for 15 machines and other equipment, and bids on a similar list for an East Boston school will be closed April 22.

New York

NEW YORK, April 20.

WHILE inquiry is largely for single tools with no new lists of importance before the market, buying is apparently continuing in about the same volume as earlier in the month. The probability of future business appears in the contract reported to have been closed by the Central Railroad of New Jersey for new shops at Bethlehem, Pa. The International Motor Co. continues active in the purchase of individual tools for its various plants at Plainfield and New Brunswick, N. J., and Allentown, Pa. The Packard Motor Car Co. recently closed on two six-spindle and one eight-spindle automatic cylinder grinders.

Among railroad purchases of tools have been a 90-in. driving-wheel lathe by the Wabash Railway Co.; five 24-in. drill presses by the New York Central; a side-head boring mill, a 30-in. x 14-ft. lathe and a 100-ton bushing press by the Texas & Pacific, and a 16-in. geared-head lathe by the Nickel Plate.

Industrial purchasers of machine tools have included the Midvale Co., a 48-in. x 46-ft. forge lathe; American Sheet & Tin Plate Co., a 10-ft. plate bending roll; Detroit Forging Co., two die sinking machines; Barber-Colman Co., Rockford, Ill., a vertical surface grinder; M. W. Kellogg Co., Jersey City, N. J., a 3-in. x 36-in. turret lathe and a floor grinder; Farrell Foundry & Machine Co. Ansonia, Conn., a 2-in. x 26-in. turret lathe; Westinghouse Electric & Mfg. Co., a vertical shaper for Sharon, Pa.; Bog Mfg. Co., Chicago, an automatic milling machine, and the Hollins & Arrousez Electric & Engineering Co., Los Angeles, an automatic milling machine.

Bids have been asked on a general contract by the Joseph Heinrichs Corporation, 948 Broadway, New York, manufacturer of coffee urns and other metal products, for a three-story plant at Long Island City, 100 x 105 ft., estimated to cost $80,000. C. S. Howell, 11 East Forty-fifth Street, New York, is architect.

The Signal Engineering & Mfg. Co., 533 Canal Street, New York, has leased space in the building at 154-60 West Fourteenth Street, totaling 10,000 sq. ft. of floor area, for a new plant.

The superintendent of lighthouses, Staten Island, N. Y., is asking bids until April 26 for six 5-kw. oil engine-generator sets, proposal 21454; also for six 5-kw. 110-volt, d.c. generators, driven by kerosene engine, with generator and engine on common base.

The National Biscuit Co., 85 Ninth Avenue, New York, has awarded a general contract to R. C. Wieboldt, 1534 West Van Buren Street, Chicago, for a machine shop, power house and addition to storage and distributing plant at Evanston, Ill., to cost $250,000 with equipment. Ray E. Tomlinson is president.

The real estate, plant and business of the Manhattan Brass Co., 332 East Twenty-eighth Street, extending through to East Twenty-seventh Street, has been purchased by Robert B. Bowler. The plant consists of a main six-story and four-story building, with several smaller units, on plot of 54,000 sq. ft. The business will be discontinued in the near future; all present unfinished orders will be completed and negotiations are said to be under way for the sale of the machinery and equipment.

The Standard Oil Co. of New York, 26 Broadway, will soon begin the construction of a two-story storage and distributing plant, with service, repair and garage building for company motor trucks at U and Fifty-fifth Street, Mill Basin district, Brooklyn, to cost about $65,000.

The Board of Education, Bayport, L. I., is considering the installation of manual training equipment in its proposed high and grade school, estimated to cost $250,000, for which plans are being drawn by Wilson Potter, 22 East Seventeenth Street, New York, architect.

The International Nickel Co., 67 Wall Street, New York, has awarded a contract to the Standard Steel Co., Welland, Ont., for an addition to its plant at Port Colborne, Ont., to cost $750,000 with machinery. The company is said to be arranging for expansion at its mill at Sudbury, Ont., to cost more than $2,500,000, including buildings and equipment.

Oscar Goldschlag, 1482 Broadway, New York, architect, is completing plans for a two-story automobile service, repair and garage building, 136 x 165 ft., on Hamilton Street, Albany, N. Y., to cost about $150,000.

The International Retinning & Repairing Co., 516 West Twenty-fifth Street, New York, has leased space in the building at 531 West Twenty-sixth Street for extensions in its works.

Fire, April 8, damaged a portion of the machinery and fixtures at the plant of the Halcolite Co., Inc., 96-102 Grand Street, New York. An official estimate of loss has not been announced.

The Board of Education, Park Avenue and Fifty-ninth Street, New York, has received an appropriation from the Board of School Estimate of $1,401,490 for mechanical equipment for five new public schools in different parts of Brooklyn, and new schools in Queens.

C. Mundt & Sons, 53 Fairmount Avenue, Jersey City, N. J., manufacturers of perforated metals, etc., have plans for a one-story machine shop at 512 Johnston Avenue, 85 x 130 ft., to cost approximately $55,000 with equipment. John T. Rowland, 101 Sip Avenue, is architect.

The Tide Water Oil Co., 11 Broadway, New York, has filed plans for extensions in its steel tankage and distributing plant at its refinery, Constable Hook, Bayonne, N. J., to cost $175,000.

The Crane Market

BOTH overhead and locomotive cranes are showing more activity than for several weeks. Inquiries before the market promise some desirable business before summer. The several overhead cranes for the Phoenix Utility Co., 71 Broadway, New York, are still open. The Tannin Corporation, 100 East Forty-second Street, New York, which asked for estimating prices on three 10-ton overhead cranes some time ago, is reported to be preparing to reissue the inquiry. The West Virginia Pulp & Paper Co., 200 Fifth Avenue, New York, is in the market for a 7-ton, 65-ft. span hand power crane with 5-ton and 2-ton trolleys and a 5-ton hand power crane. The 25-ton hand power crane for the J. G. White Engineering Co., 43 Exchange Place, New York, is expected to close in a few days.

In the Pittsburgh district the Jones & Laughlin Steel Corporation is inquiring for eleven 5-ton to 15-ton cranes for its Woodlawn, Pa., plant. The Carnegie Steel Co. has placed eleven 20-ton cranes for the 52-in. mill, shipping yard at the Homestead works.

Among recent purchases are:

Boston & Albany Railroad, Boston, two 100-ton trolleys, two 25-ton trolleys and one 10-ton overhead crane bridge, 70-ft. span, for its West Springfield shops, reported purchased from the Niles-Bement-Pond Co.

General Engineering & Management Corporation, 165 Broadway, New York, a 75-ton overhead crane from the Cleveland Crane & Engineering Co.

Pennsylvania Railroad, Philadelphia, three 10-ton, 85-ft. span gantry cranes, one for Conway and two for Lucknow, Pa., from the Whiting Corporation; one 15-ton double trolley electric crane for Enola, Pa., reported purchased from the Niles-Bement-Pond Co.; and four 25-ton locomotive cranes from the Browning Crane Co.

Anaconda Copper Mining Co., 25 Broad Street, New York, a 1-ton, 25-ft. span, gantry crane from the American Crane Co.

Mansfield Foundry Co., Mansfield, Mass., reported to have purchased three small capacity electric overhead cranes from the Shepard Electric Crane & Hoist Co.

E. I. du Pont de Nemours & Co., Wilmington, Del., a 15-ton, 43-ft. span crane for Lodi, N. J., from the Northern Engineering Works.

Federal Shipbuilding Co., Kearny, N. J., a 5-ton hand power crane, from Alfred Box & Co.

Chicago, Burlington & Quincy, a 30-ton locomotive crane from the American Hoist & Derrick Co.

Yosemite Lumber Co., San Francisco, Cal., a 30-ton locomotive crane from the American Hoist & Derrick Co.

United Gravel Corporation, Edgely, Pa., a used 10-ton Northwest crawl-tread locomotive crane from Philip T. King, New York.

Garofano Construction Co., Mount Vernon, N. Y., a 10-ton crawl-tread locomotive crane from the McMyler-Interstate Co.

Maurice D. Walsh, 1124 Findlay Avenue, New York, consulting engineer, a 10-ton crawl-tread locomotive crane from the Northwest Engineering Co.

National Radiator Co., New Castle, Pa., a 5-ton, 56-ft. span overhead crane from the Milwaukee Electric Crane & Mfg. Corporation.

Carnegie Steel Co., Pittsburgh, eleven 20-ton, 79-ft. span, 5-motor overhead cranes for its Homestead works, from the Morgan Engineering Co.

Stone & Webster, Inc., Boston, a 60-ton stationary hoist for a Boston power plant addition, from the Niles-Bement-Pond Co.

Graver Corporation, East Chicago, Ind., a 15-ton, 58-ft. span, 3-motor overhead crane from the Shaw Electric Crane Co.

Illinois Central Railroad, two 25-ton, 86-ft. span, 4-motor cranes and one 10-ton, 70-ft. span, 3-motor crane for the Burnside, Ill., shops, from the Harnischfeger Corporation.

Dewey Portland Cement Co., Davenport, Iowa, a 3-motor bucket crane from the Harnischfeger Corporation.

The Jersey Central Power & Light Co., Morristown, N. J., is disposing of a bond issue of $1,000,000, a portion of the proceeds to be used for extensions and improvements.

The Vaughn Ignition Protector Co., Bradley Beach, N. J., recently organized by B. L. Cahn, Bradley Beach, and associates, has acquired from Preston Vaughn the interests and rights of a patented ignition protector system for automobiles, and plans the operation of a local plant. Mr. Cahn will be president of the new company, and Rudolph Anderson, Bradley Beach, secretary and treasurer.

Plans have been filed by the American-La France Fire Engine Co., Bloomfield, N. J., for its proposed one-story addition to cost about $15,000, for which superstructure will proceed at once. Starrett & Van Vleck, 393 Seventh Avenue, New York, are architects. Headquarters of the company are at Elmira, N. Y.

Ovens, power equipment, conveying machinery and other mechanical equipment will be installed in the one-story plant, 200 x 240 ft., to be erected at Newark, N. J., by the Continental Baking Co., 542 Fifth Avenue, New York, estimated to cost $500,000. C. B. Comstock, 110 West Fortieth Street, New York, is architect.

John F. Enderle, 157 Mapes Avenue, Newark, has purchased property, 80 x 116 ft., at Irvington, heretofore held by the Phoenix Brass Co., as a site for a new plant to manufacture electrical equipment, for which plans will soon be drawn.

Peter Kozans, Jersey City, N. J., has taken out a permit to build a one-story machine shop at 157 St. Paul's Avenue, for which plans were prepared by George A. Flagg, 665 Newark Avenue, architect.

The Gillette Safety Razor Co., Boston, is reported to be concluding negotiations for the purchase of the plant and business of Otto Roth, Inc., 11-15 Runyon Street, Newark, manufacturer of razors. It is said that the acquired works will be continued in service.

J. H. and W. C. Ely, 784 Broad Street, Newark, architects, have plans for a two-story automobile service, repair and garage building at 360-66 Central Avenue, 125 x 130 ft., to cost $85,000.

The Atlas Fence Co., Newark, is making ready to operate at its new plant at 35-49 Verona Avenue, in course of erection for several months. The former works at 288 Passaic Street will be discontinued and production concentrated at the new location. Offices will also be removed from 1 Clinton Street to the plant. The company manufactures iron and wire fencing.

New England

BOSTON, April 19.

MACHINERY sales have again fallen off and have been confined to comparatively few houses. Most of the tools sold, however, were new and involved a fairly large expenditure. An encouraging feature is the increase in inquiries, prospective business largely involving machines costing around $2,000 each and over. Boston's school commission is the most important pending customer in the number of machines required. It has taken bids on three 12-in. x 5-ft. screw-cutting engine lathes of one type, three 12-in. x 5-ft. engine lathes of another type, a plain milling machine, single geared crank shaper, 9-in. x 5-ft. engine lathe, an upright drill, a 14½-in. plain bearing sensitive drill, a Blount grinder, Stewart forge, Cincinnati grinder, 100-lb. single-frame steam hammer, motor-driven Cincinnati grinder and some small equipment. The commission is also asking bids on a similar amount of equipment for an East Boston school, bids to close April 22.

The New York, New Haven & Hartford Railroad has tentative plans for a machine shop at East Hartford, Conn., to replace one destroyed by fire. Motors, lathes, planing machines, a wheel press and a shaper have been sent to Braintree, Mass., for reclaiming. Temporary metal working quarters will be erected.

The city of Providence, R. I., will soon award contract for the erection of a school to cost approximately $500,000. Two manual training departments are included in the plans.

Work has started on an addition to the power house of the Cambridge Electric Light Co., Cambridge, Mass. J. Henry Russell is president. French & Hubbard, 210 South Street, Boston, are the engineers.

The Clapp-Eastham Co., 139 Main Street, Cambridge, Mass., radio sets and accessories, will move to the Chicle Building, Thompson Avenue, Long Island City. Miscellaneous equipment, including motors will be purchased. Verner A. Hendrickson is president.

Plans for a one-story, 90 x 92 ft. manufacturing plant have been filed by the Springfield Commercial Body Co., 365 Liberty Street, Springfield, Mass., automobile truck bodies. The Samuel M. Green Co. is the architect. Pro-

vision has been made for the erection of three additional stories later.

The C. & P. Electric Works, Inc., East Springfield, Mass., is arranging for the early removal of its plant at 92 Hayden Street to a new building on Shaw's Lane where facilities will be provided for considerable increase in output.

The Cole-Roscoe Mfg. Co., South Norwalk, Conn., manufacturer of wire cloth, etc., has awarded a general contract to the F. H. Keyser Co., Keeler Avenue, for a two-story addition, 25 x 30 ft.

The Street Department, Reading, Mass., has plans under way for a one-story municipal service, repair and garage building for city motor trucks and cars to cost $55,000. A machine shop will be installed. G. H. Sidebottom, 101 Tremont Street, Boston, is architect and engineer.

The Wallace & Tucker Lumber Co., Providence, R. I., recently formed with a capital of $100,000, has leased property at 434 Allens Avenue, comprising the former shipyard of the Lord Construction Co. The different structures will be converted for lumber mill service, with mechanical equipment for unloading, conveying, storing, etc. M. E. Wallace is president, and T. B. Newell, secretary.

The addition at the plant of the Foster Machine Co., Westfield, Mass., manufacturer of textile machinery and parts, will be three stories, 80 x 225 ft., estimated to cost $200,000 with machinery. General contract has been let to E. J. Pinney, Inc., 220 Dwight Street, Springfield, Mass.

The Nash Engineering Co., Wilson Road, South Norwalk, Conn., manufacturer of pumps, compressors, etc., will soon begin work on a one-story addition, 50 x 70 ft., for which contract has been let to the Stefco Steel Co., 1270 Broadway, New York.

The National Co., 110 Brookline Street, Cambridge, Mass., manufacturer of machinery and parts, has asked bids for the erection of a two-story addition, 45 x 96 ft., to cost $45,000. W. A. Ready is president.

The F. A. Day Co., Bristol, Conn., manufacturer of screw machinery, has awarded a general contract to the H. Wales Lines Co., Meriden, Conn., for a one-story addition, 24 x 74 ft., to cost about $35,000 with equipment. George P. Barker, Meriden, is architect.

The Lindstrom Tool & Toy Co., Silliman Street, Bridgeport, Conn., has awarded a general contract to the Eagle Construction Co., Bridgeport, for a one-story addition, 25 x 100 ft.

The Firestone Tire & Rubber Co., South Main Street, Hudson, Mass., with headquarters at Akron, Ohio, will begin work on a five-story and basement addition, operated under the name of the Firestone-Apsley Rubber Co., to be 80 x 200 ft., estimated to cost $225,000 with equipment.

The James C. Goff Co., Point Street, Providence, R. I., building materials, will install mechanical handling equipment at its proposed new plant at Reservoir and Narragansett Avenues, where a site, 240 x 428 ft., has been acquired, including hoisting, conveying, elevating, loading and other machinery. Plans are being drawn by Jenks & Ballou, Grosvenor Building, architects and engineers. Thomas G. Bradshaw is president.

The Nutmeg Flying Co., Inc., Waterbury, Conn., recently organized with capital of $50,000 by Oscar F. Kraus, 144 Grove Street, head of the Nutmeg Motor Express Co., and associates, contemplates the establishment of a repair and parts plant for fleet of airplanes to be operated by the company. Later it is proposed to establish a plant for the manufacture of aircraft. Other officials of the company are Leo F. Kraus and Frank T. Healey.

Buffalo

BUFFALO, April 19.

BIDS have been asked on a general contract by the F. N. Burt Co., Ltd., 540 Seneca Street, Buffalo, manufacturer of paper boxes and containers, for a new six-story plant, 170 x 230 ft., to cost $400,000 with machinery. Plumer & Mann, 700 Main Street, are architects. M. R. Cass is general manager.

The American Radiator Co., 2000 Elmwood Avenue, Buffalo, has taken out a permit for a one-story addition to cost $22,000. It will be equipped primarily for sand-blasting service.

R. J. Reidpath, Mutual Life Building, Buffalo, architect and engineer, has plans for a six-story automobile service, repair and garage building at Rochester, N. Y., to cost in excess of $200,000 with equipment.

The Stromberg-Carlson Telephone Mfg. Co., 1060 University Avenue, Rochester, N. Y., manufacturer of intercommunicating telephone systems and equipment, has awarded a general contract to John B. Pike, 1 Circle Street, for its proposed one-story addition, 160 x 470 ft., to cost close to $200,000 with equipment. S. Firestone, 59 South Avenue, is engineer. W. R. McCanne is president and general manager.

Fire, April 14, destroyed a building at the plant of the Draycott Mills, Inc., Skaneateles Falls, N. Y., manufacturer of roofing, with loss reported at $50,000. Headquarters are at Fulton, N. Y.

The Pierce-Arrow Sales Co., 756 Main Street, Buffalo, is considering the construction of a one-story service and repair works at Main Street and the Jewett Parkway, to cost about $100,000 with equipment. Plans will be drawn by the service department of the Pierce-Arrow Motor Car Co., 1695 Elmwood Avenue.

The Frontier Corporation, care of Hugh L. Cooper, 101 Park Avenue, New York, consulting engineer, has applied for permission to carry out a hydroelectric power project on the St. Lawrence River at Barnhart Island and vicinity, on the boundary between New York and Ontario. The project provides for the development of 300,000 hp. within 42 months after permission is granted, and for considerable increase in this output following. The estimated cost of the entire enterprise is placed at $238,000,000. The Frontier Corporation, recently organized, is affiliated with interests connected with the General Electric Co., Schenectady, N. Y., and the Aluminum Co. of America, Inc., Pittsburgh. George T. Bishop is president.

The City Council, Perry, N. Y., is asking bids until May 11 for the construction of a pumping plant for the municipal waterworks, including pumping machinery, oil-operated engine and accessory apparatus. H. J. Rowe, 21 Scott Avenue, Wellsville, N. Y., is engineer.

The Board of Education, Corning, N. Y., plans the installation of manual training equipment in its proposed two-story junior high school, to cost $350,000, for which bids are being asked on a general contract until April 28. Palmer Rogers, 101 Park Avenue, New York, is architect.

The Spencer Lens Co., 442 Niagara Street, Buffalo, manufacturer of lens, optical instruments, etc., has begun the removal of its plant to a building on Boat Street, recently acquired. It is proposed to provide facilities for considerable increase in production. Louis M. Potter is vice-president.

The Myrick Machine Co., Olean, N. Y., has been purchased by George H. Luther, owner of the Luther Mfg. Co., also of Olean. The Myrick company manufactures gas and gasoline engines and operations will be carried on in connection with the Luther plant, which will continue the manufacture of steam engines and gas regulators.

Cleveland

CLEVELAND, April 19.

MACHINE tool sales tapered off somewhat in this district the past week and new inquiry is rather light. There is a tendency among some buyers of single machines to delay the placing of orders until the tools are needed and then to ask for more prompt delivery than manufacturers can make. The U. S. Aluminum Co., Cleveland, which has been buying some equipment for plant extensions, has added three milling machines to its purchases. The Electric Auto Lite Co., Cleveland, purchased six automatic screw machines. The Nickel Plate Railroad added two shapers to its purchases for its Frankfort, Ind., shops. The Differential Steel Car Co., Findlay, Ohio, purchased a 52-in. boring mill and a turret lathe. The Haughton Elevator & Machine Co., Toledo, and the Toledo Machine & Tool Co. each purchased a milling machine.

The Seneca Wire & Mfg. Co., Fostoria, Ohio, has placed contracts for an extension, 145 x 160 ft., and is preparing plans for an additional building, one-story, 200 x 300 ft. L. E. Kinn is president.

The Farmers' Sugar Co., Defiance, Ohio, contemplates the erection of a refinery. Charles H. Allen is president.

The Finzer Brothers, Sugar Creek, Tuscarawas County, have placed contract with Charles Wendling, Dover, Ohio, for a three-story brick manufacturing building, 50 x 360 ft. Plans include another building, 100 x 140 ft., contract for which has not yet been placed.

The Manitowoc Shipbuilding Corporation, Manitowoc, Wis., is in the market for a used sectional flanging press, 200 tons capacity, with 66-in. gap.

The Everhard Mfg. Co., 317 Schroyer Avenue, Canton, Ohio, manufacturer of metal specialties, will take bids May 1 for a one-story addition.

The United Toys, Inc., Cleveland, has been organized to acquire the plant of the Perfection Coaster & Mfg. Co., Settlement Road, Brook Park, manufacturer of toy vehicles. The new organization plans to add the manufacture of velocipedes and other children's wheeled vehicles. The company has a capital stock of $125,000 in preferred stock and 600 no par common shares. The officers are Alfred L. Hohlfelder, president and treasurer; Walter L. Krewson, vice-president, and P. B. Graham, secretary.

Chicago

CHICAGO, April 19.

IN both sales and inquiry April so far is running about equal to the first 15 days of March, which was less active than the last half of that month. The last few days have brought out a slight increase in miscellaneous inquiries, but orders are slow in being placed. Prices as a rule are steady; the only change noted within the week was a 10 per cent advance on centerless grinders. The Elgin, Joliet & Eastern has bought a 20-in. and two 24-in. drills, and a truck manufacturer in Indiana has placed a 24-in. shaper and an 18-in. x 8-ft. lathe. The One Minute Washing Machine Co., Newton, Iowa, has purchased a hand screw machine, an automatic screw machine and a four-spindle drill. The International Harvester Co. is actively in the market for machine tools and last week placed a number of screw machines for its Chicago works. This company has purchased the Rock Island, Ill., plant of the Moline Plow Co., which, it is reported, will be equipped and put on a productive basis at an early date. The Speed-O-Matic Co., Chicago, is in the market for a milling machine. The Missouri Pacific Railroad is inquiring for a 176-ft. compressor.

The General Electric Co., Schenectady, N. Y., has issued the following list for its Salt Lake City, Utah, plant. Reconditioned tools will be considered and all machines are to be arranged for 220-volt, 3-phase, 60-cycle motors.

One 36-in. x 18-ft. heavy duty, geared head lathe, direct drive.
One 14-in. x 12-ft. American, or equivalent, geared head lathe, direct drive.
One 28-in. heavy duty back geared crank shaper, direct drive.
One 21-in. sliding head upright drill, belt drive, Cincinnati-Bickford, or equivalent.
One 6-in. x 6-in. high-speed hack saw, Peerless, or equivalent.
One 3½-ft. heavy-duty radial drill, direct drive.
One universal milling machine, chain drive, equivalent to No. 2M Cincinnati.
One 150-ton press, 62-in. between bars, 10-ft. between ram and headblock.
One 2-wheel emery floor grinder with General Electric Co. motor.
One disk grinder, equivalent to 18-in., type G Besley No. 10.
One 16-in. band saw, Wallace, or equivalent, with General Electric Co. motor
One saw table, Globe No 1, or equivalent, with 12-in. saw.
One knockout punch press, 1½-in. to 2-in.
One 20-in. radial drill.
One polishing and buffing lathe with General Electric Co. motor.

The Hill Products Co., 4600 Schubert Street, Chicago, nut manufacturer, will build an addition, 130 x 280 ft., to cost $90,000. Daniel J. Schaffner, 64 West Randolph Street, is architect.

The Mechanics Machine Co., Rockford, Ill., manufacturer of automobile transmissions, will erect a six-story factory building, costing $175,000, at the corner of Eighteenth Avenue and Ninth Street.

Manaster & Brother, Thirty-seventh Street and Morgan Street, Chicago, are having plans prepared by Henry Stanford Hall, 5 North LaSalle Street, for remodeling a power plant. A 150-ft. reinforced concrete stack and new boilers are contemplated in the improvement.

The Hanson Machine Co., 1901 Wilson Avenue, Chicago, will build a two-story machine shop, 75 x 84 ft., to cost $13,500. J. A. Linstrand, 1612 Milwaukee Avenue, is the architect.

The McKeown Brothers Co., 112 West Adams Street, Chicago, manufacturer of roof trusses, has purchased 1½ acres on South Keeler Avenue, between Fifty-second and Fifty-third Streets, and will erect a fabricating plant, the first unit of which will cost about $100,000.

The Central Gas & Electric Co., Chicago, A. E. Pierce, president, recently organized to take over electric light and power properties in Illinois, Michigan, Indiana and other states, is disposing of a bond issue of $6,500,000, a portion of the proceeds to be used for carrying out the merger and for proposed extensions and improvements in power plants and system.

The Wood Brothers Thresher Co., East Second and Washington Streets, Des Moines, Iowa, manufacturer of threshing machinery, etc., has awarded a general contract to the Truscon Steel Co., Youngstown, for its proposed one-story addition, 300 x 350 ft., to cost $300,000 with machinery. J. H. Raymaker is company engineer. F. J. Wood is president.

The Linhart Wagon Co., 2600 University Avenue, St. Paul, Minn., manufacturer of wagons, automobile bodies, etc., has preliminary plans under advisement for a new plant on Pearl Street. F. F. Linhart is president.

In connection with the proposed addition to its mills at International Falls, Minn., the Minnesota & Ontario Paper Co., Builders' Exchange Building, Minneapolis, Minn., will carry out three hydroelectric power developments on the La Seine River, near International Falls and Fort Frances, Ont. The plants will develop a total capacity of 27,000 hp. The extension to the paper mills will cost in excess of $1,000,000 with machinery. To carry out the project the company has arranged for a bond issue of $4,000,000. It is a subsidiary of the Backus-Brooks Co., same address; E. W. Backus is president.

The Carlson Machine Works, 415 Wall Street, Sioux City, Iowa, is completing plans for a one-story and basement addition, 50 x 100 ft., to cost about $20,000. Beuttler & Arnold, Grain Exchange Building, are architects.

The Twin City Motor Bus Co., 1 South Eleventh Street, Minneapolis, Minn., has plans for a one-story service, repair and garage building, 125 x 300 ft., at Chestnut Street and First Avenue, to be used for a terminal structure, estimated to cost $250,000 with equipment. T. Julian McGill is president.

The Superior Metal Products Co., Boulder, Colo., organized by J. E. Robinson, Boulder, and associates, has acquired property at Spruce and Twenty-eighth Streets as a site for a new plant, 50 x 105 ft.

The Roxana Petroleum Corporation, Arcade Building, St. Louis, has plans under way for a new one-story storage and distributing plant at East St. Louis, Ill., to cost $60,000.

The S. Karpen & Brothers Co., 636 West Twenty-second Street, Chicago, manufacturer of furniture, has plans for a six-story factory, 70 x 195 ft., to cost approximately $500,000 with equipment. Marshall & Fox, 431 North Michigan Avenue, are architects. Solomon Karpen is president.

The Stearns-Roger Mfg. Co., 1718 California Street, Denver, Colo., is inquiring for an Ingersoll milling machine, approximately 40 in. between housings, 30 in. under adjustable rail, 10 ft. bed, with two side heads and at least one vertical head and a 5-ft. horizontal boring mill, Lucas make, to pull 4-in. bar.

Detroit

DETROIT, April 19.

BIDS will soon be asked by the Wabash Railway Co., Railway Exchange Building, St. Louis, for the erection of its proposed one-story car repair shop in the Oakwood district, Detroit, to cost $100,000 with equipment. R. H. Howard is chief engineer.

The Board of Education, Michigan Center, Mich., is considering the installation of manual training equipment in its proposed two-story high school estimated to cost $110,000, for which preliminary plans are being prepared by H. D. Davenport, Charlevoix Building, Detroit, architect.

The Federal Mfg. Co., Holland, Mich., manufacturer of furniture, is planning the erection of a new unit for the manufacture of church furniture, to be one-story, totaling 20,000 sq. ft. of floor space, reported to cost $50,000.

The Bryant Paper Co., Kalamazoo, Mich., has awarded a general contract to the Boyer Construction Co., Kalamazoo, for a two-story and basement machine room addition, 100 x 280 ft., to cost $100,000 with equipment. V. D. Simons, 39 South La Salle Street, Chicago, is architect and engineer.

The Alkema & Mallast Co., Mount Clemens, Mich., recently organized, is completing plans for the operation of a local factory for the manufacture of radio equipment, patented by P. Robert Alkema, one of the heads of the company.

The Detroit & Michigan Stove Co., 6900 East Jefferson Avenue, Detroit, has asked bids on a general contract for a one-story addition, 75 x 100 ft., primarily for enameling operations. Charles Kotting, Dime Bank Building, is architect. William T. Barbour is president.

The Board of Education, Kingsford, Mich., plans the installation of manual training equipment in its proposed

high school addition near the Ford Road and Hamilton Street, estimated to cost $200,000. F. E. & G. E. Parmalee, Kingsford, are architects.

Bonnah & Chaffee, Barlum Building, Detroit, architects, are completing plans for a two-story automobile service, repair and garage building, 80 x 200 ft., to cost $100,000 with equipment.

The Board of Education, Ferndale, Mich., is considering the installation of manual training equipment in its proposed two-story addition to the Lincoln high school, to cost $150,000, for which superstructure will soon begin. H. T. Keyes, Free Press Building, Detroit, is architect.

The Detroit Stoker Co., Monroe, Mich., has completed the construction of a new foundry and pattern shop, totaling about 25,000 sq. ft. of floor space, and will place in immediate service for increased production. Additions will be made in the working force.

Elevating machinery, power equipment, conveying and other apparatus will be installed in the proposed five-story and basement addition, 116 x 175 ft., to the plant of the Postum Cereal Co., Battle Creek, Mich., to cost in excess of $300,000 with machinery. Lockwood, Greene & Co., Buhl Building, Detroit, are architects and engineers.

Gulf States

BIRMINGHAM, April 19.

PROPERTY at Conti and Vienville Streets, New Orleans, has been acquired by the American Sheet Metal Works, Inc., 3500 South Carrollton Street, as a site for a new plant, for which plans will soon be drawn. It is reported to cost in excess of $50,000 with machinery.

Calvin Jones, 5053 Highland Avenue, Birmingham, has plans for a one-story automobile service, repair and garage building, 190 x 200 ft., to cost $65,000 with equipment.

The Abilene Cotton Oil Co., Abilene, Tex., recently formed by Anderson, Clayton & Co., Houston, Tex., is completing plans for the erection of a new cottonseed oil mill to cost approximately $350,000 including machinery. W. M. Andrews is representative at Abilene.

The City Council, Tallulah, La., has preliminary plans for extensions and improvements in the municipal electric light and power house, with the installation of additional equipment.

The Tampa Steel Products Co., Tampa, Fla., operated by the Florida Industrial Development Corporation, 110 Franklin Street, David Giles, vice-president, is arranging for the early construction of a new plant at Industrial City, near Tampa, reported to cost about $75,000 with equipment. A housing development with initial allotment of about 35 homes has been arranged.

The Sturges Co., Meridian, Miss., is considering rebuilding the portion of its grain elevator destroyed by fire April 6 with loss reported at $100,000 including equipment.

The Alabama Power Co., Birmingham, has begun preliminary work for its proposed new hydroelectric power plant on the Coosa River, about 6 miles from Wetumpka, Ala. A power dam 90 ft. high will be built. The new station will be known as Lock 18 and will be one of the largest plants of this kind in the South. It is estimated to cost in excess of $7,000,000 with transmission system.

The Citizens Ice Co., Pinellas, Fla., is considering the construction of a new ice-manufacturing and cold storage plant, to cost about $40,000 with machinery.

The City Council, Lulu, Miss., is asking bids until May 1 for equipment for a municipal waterworks, including motor-driven centrifugal pump, 50,000-gal. capacity steel tank on 100-ft. tower, valves and auxiliary apparatus. N. Yeates, secretary of the city water commission, is in charge.

The Phoenix Portland Cement Co., Birmingham, will erect a new building at its plant at Powderly, to be one story, 60 x 350 ft., to cost about $75,000 with equipment.

The Central Texas Power Co., San Antonio, Tex., has plans under way for extensions and improvements in the electric power house and ice-manufacturing plant of the Goliad Supply Co., Goliad, Tex., recently acquired, to include the installation of additional machinery.

The Western Carbon Co., Amarillo, Tex., a subsidiary of the Columbia Carbon Co., Dayton, Ohio, is completing plans for the early construction of a new carbon black mill in the Panhandle oil field near Amarillo, to cost $500,000 with machinery.

The City Council, Hico, Tex., plans the early purchase of centrifugal pumping machinery for proposed extensions in the municipal water system. J. C. Barrow is mayor, in charge.

The Seaboard Air Line Railway Co., Portsmouth, Va., is reported to be planning the construction of new repair shops at Indiantown, Fla., with engine house, machine shop and other buildings. An ice and precooling plant is also under advisement.

O. D. Dillingham, Abilene, Tex., and associates have plans under way for a one-story ice-manufacturing plant to cost $27,000 with equipment. David S. Castle, Alexander Building, is architect.

The Houston Blow Pipe Co., 2010 Congress Avenue, Houston, Tex., is contemplating the erection of a new one-story plant, to cost $25,000 with machinery. F. W. Myers is president.

The Southern Pacific Co., Dallas, Tex., is reported to be planning an addition to its engine house and shops at Sanderson, Tex., with the installation of equipment; the local division terminal will also be enlarged. The entire project is estimated to cost $135,000.

William B. Reily & Co., Inc., New Orleans, has inquiries out for can-manufacturing equipment for installation in a proposed local plant.

Walter Weaver, Collinsville, Ala., and associates are considering the construction of a steam-operated electric power plant at Crossville, Ala., for light and power service in this section. The initial station is reported to cost $30,000 with equipment. It is purposed to organize a company to carry out the project.

The Southern Paper Co., Moss Point, Miss., has plans for an addition, to include a steam-operated electric power plant. A new storage and distributing building will be built. The complete expansion is estimated to cost $150,000 with equipment.

The plant and property of the Citizens' Light & Power Co., Fredericksburg, Tex., has been acquired by W. G. Swenson, Abilene, Tex., and associates, for $190,000. The new owners will continue the operation of the plant and have tentative plans for extensions, including additional equipment.

Philadelphia

PHILADELPHIA, April 19.

THE Penwood Co., 131 North Fifteenth Street, Philadelphia, architect, has plans for a three-story automobile service, repair and garage building, 70 x 240 ft., at Westmoreland Avenue and B Street, estimated to cost $175,000 with equipment.

The Philadelphia Gas Range Co., 1026 Arch Street, Philadelphia, manufacturer of gas appliances, has acquired the two-story building at 955-57 North Ninth Street, 45 x 100 ft., for extensions.

Contract has been let by the Philadelphia Storage Battery Co., Ontario and C Streets, Philadelphia, to Roberts & Roller, Seventeenth and Walnut Streets, for a three-story and basement addition to cost approximately $150,000. G. Deming is superintendent.

The Philadelphia Grain Elevator Co., Bourse Building, Philadelphia, a subsidiary of the Reading Railroad, Reading Terminal, will install conveying, elevating, loading and other mechanical equipment in its new elevator on Bath Street, to cost $200,000, for which plans have been filed.

The General Electric Co., Witherspoon Building, Philadelphia, will soon begin work on three new buildings at its branch plant on Elmwood Avenue, Sixty-eighth to Seventieth Streets, 105 x 600 ft., 75 x 100 ft., and 74 x 105 ft., to cost in excess of $1,000,000 with machinery. Harris & Richards, Drexel Building, are architects. Headquarters are at Schenectady, N. Y.

The Soapstone Products Co., Grassland, Philadelphia, has acquired 3 acres near Eagle and Lawrence Roads, Oakmont, and is reported to be contemplating a new plant to cost more than $75,000.

The City Council, Atlantic City, N. J., has plans for a two-story and basement repair shop, 35 x 110 ft., to cost $40,000 with equipment. F. Larson, 10 South Tennessee Avenue, is architect.

Andrew J. Berrien and associates have acquired the plant and business of the Anthracite Mfg. Co., 520 Brunswick Avenue, Trenton, N. J., manufacturer of fuel briquettes. The new owners will continue operations and plan for expansion. William L. Hoernle and Joseph H. Stone will be officials of the new organization.

The Crane Co., 836 South Michigan Avenue, Chicago, will soon begin work on its proposed one and two-story factory branch and distributing plant, 120 x 135 ft., at Atlantic City, N. J., reported to cost $100,000 with equipment. Howard A. Stout, Guarantee Trust Building, Atlantic City, is architect.

The McKarden Paper Box Co., 224 Pine Street, Philadelphia, is arranging for the early erection of its proposed three-story and basement plant, 50 x 75 ft., to cost about

$100,000 with equipment. Clarence E. Wunder, 1520 Locust Street, is architect.

The Board of Education, Wildwood, N. J., is considering the installation of manual training equipment in its proposed three-story high school addition to cost $275,000, for which bids will soon be asked on a general contract. V. B. Smith, Guarantee Trust Building, Atlantic City, N. J., is architect; F. H. Schaefer, Temple Building, Camden, N. J., is mechanical engineer.

Fire, April 14, destroyed the plant and power house of the Wilkes-Barre Fertilizer Co., Wilkes-Barre, Pa., at Franklin Junction, with loss estimated at $175,000 including equipment. Plans for rebuilding are under advisement.

W. C. Farnsworth, head of the W. C. Farnsworth Co., Providence, R. I., is reported to have tendered an offer for the purchase of the plant of the Harrisburg Foundry & Machine Works, Harrisburg, Pa., bankrupt, with a cash payment of $65,000, and assuming of obligations totaling $288,000. The offer will be considered by the Federal Court. John T. Olmsted is referee in bankruptcy.

The Glen Alden Coal Co., Linden Street and Jefferson Avenue, Scranton, Pa., has authorized the construction of a new equipment, repair and storage building at Exeter, Pa., to cost close to $40,000 with machinery.

The Harry W. Kress Co., B. & B. Building, Allentown, Pa., recently formed to operate a building material business, plans the installation of loading, conveying, hoisting and other mechanical-handling equipment at its proposed plant on site near Union Street and the Lehigh Valley Railroad. Harry W. Kress is president, and George J. Barker, vice-president and general manager.

J. A. Sheffer, Lancaster, Pa., and associates, have formed the Metal Craft Corporation, succeeding a former local organization of the same name recently disposed of at a receiver's sale. The new company will operate a plant at Columbia, near Lancaster, for the manufacture of metal stampings and other metal specialties. Mr. Sheffer will be president and general manager, and H. L. McClure, secretary and treasurer.

The J. E. Foucart Saw Works, West Third Street, Williamsport, Pa., manufacturer of circular saws, etc., has plans under way for a two-story and basement addition, 30 x 210 ft., to cost $50,000 with equipment. J. E. Foucart is head.

The Board of Trustees, Lehigh University, Bethlehem, Pa., has plans for a three-story metallurgical building and laboratory to cost in excess of $200,000. A two-story mechanical and electrical laboratory, 50 x 100 ft., will also be built at a cost of about $80,000. Visscher & Burley, 51 East Forty-second Street, New York, are architects.

Equipment for the manufacture of asbestos shingles, including machinery recently developed for making these shingles in tapered thicknesses, is being installed by the Amblet Asbestos Co. in its new factory at Asbestos, Pa., near Philadelphia.

St. Louis

ST. LOUIS, April 19.

ERECTION will begin for a new two-story plant for the Century Electric Co., 1806 Pine Street, St. Louis, manufacturer of electric motors and parts, to be 240 x 390 ft., estimated to cost $200,000 with machinery.

The Blue Valley Foundry & Pattern Works, Inc., Twelfth Street and Bristol Avenue, Kansas City, Mo., has acquired property adjoining its plant and plans the construction of a one-story addition to cost about $30,000.

The Producers Cold Storage Co., Chillicothe, Mo., has tentative plans for extensions and improvements in its local cold storage and refrigerating plant, with the installation of additional equipment. It is also proposed to enlarge the plant at St. Joseph, Mo.

The City Council, Hartington, Neb., has authorized plans for a municipal electric light and power plant. An engineer will soon be selected and bond issue arranged.

The Camden Furniture Co., Camden, Ark., is completing plans for a proposed plant, estimated to cost $50,000 with machinery. H. C. Rothert, Camden, is president.

The City Council, Washington, Mo., has plans under way for extensions and improvements in the municipal waterworks, to include the installation of motor-driven centrifugal pumping machinery and auxiliary equipment. W. S. Merkle, 144 North Twelfth Street, St. Louis, is engineer.

The Tulsa Ice Machine Co., Tulsa, Okla., manufacturer of ice-making and refrigerating machinery, has plans under consideration for enlargements and the installation of additional equipment.

The Electric Public Service Co., Bristow, Okla., is disposing of a bond issue of $700,000, a portion of the proceeds to be used for extensions and improvements in plants and system. The company also operates electric light and power utilities in Ohio. R. A. Pratt is president.

The Board of Education, Norman, Okla., is considering the installation of manual training equipment in its proposed two-story and basement high school estimated to cost $175,000, for which superstructure will soon begin. Layton, Hicks & Forsyth, Braniff Building, Oklahoma City, Okla., are architects.

The Kansas City Gas Co., Kansas City, Mo., operating natural gas properties, is disposing of a bond issue of $1,416,000, a portion of the fund to be used for extensions and improvements. George E. Nicholson is president.

The Arkansas-Missouri Power Co., Kennett, Mo., has completed plans for a new one-story ice-manufacturing plant, estimated to cost close to $100,000 with machinery.

The City Council, Bowling Green, Mo., is considering the installation of pumping equipment in connection with a proposed new municipal waterworks, for which a bond issue of $80,000 has been voted.

Contract for a new power house for the St. Louis Smelting & Refining Works of the National Lead Co. at St. Francis, Mo., has been let to the J. V. Boland Construction Co., St. Louis. It will contain three 814-hp. boilers and will represent an expenditure of $185,000.

The Blue Valley Foundry & Pattern Works, Twelfth Street and Bristol Avenue, Kansas City, Mo., has recently purchased property upon which it will erect an addition to its foundry.

Cincinnati

CINCINNATI, April 19.

MACHINE tool buying has subsided and sales the past week were the smallest in several months. With only a few exceptions orders were confined to single machines. Both railroads and automobile makers are purchasing but a small amount of equipment at the moment, while the general industrial field is the most fertile source of business. The Unit-Steel Corporation, Dayton, Ohio, has bought a number of punch presses and other machinery at a total expenditure of over $100,000.

The scale of operations in local machine tool plants is much less than a few months ago. Many builders can make fairly prompt deliveries, although there are a few manufacturers who have from six to eight weeks' production ahead of them.

A company in the automotive industry has purchased two lathes and two grinders. The United States Coal & Coke Co., Pittsburgh, has taken a 36-44 sidehead boring mill from the Niles-Bement-Pond Co. The latter also has booked two axle journal turning lathes for the Pullman Car & Mfg. Corporation, Chicago. The New York Central, which bought two 24-in. motor-driven drills last week, has ordered three more from a local builder. The Nickel Plate is the buyer of a 32-in. and a 26-in. motor-driven shaper for its Frankfort, Ind., shops, and is inquiring for a lathe for Toledo, Ohio, delivery.

The Grasselli Chemical Co., Cleveland, is contemplating the erection of a four-unit plant near Greenup, Ky.

The Unit-Steel Corporation, 702 Mutual Home Building, Dayton, Ohio, has leased a one-story factory building of the former Barney & Smith Car Co. plant containing 70,000 sq. ft., and will manufacture unit steel structural material, operating under basic patents. Production will start about June 1. Joseph Herzstam is president and general manager.

The Owens Bottle Co., Toledo, Ohio, manufacturer of glass containers, has plans for a new warehouse, a two-story glass storage house, several machinery repair buildings and a water filtration plant at its Huntington, W. Va., works. Enlargement of the company's wood box manufacturing plant also is contemplated.

The Western Paper Goods Co., Third and Lock Streets, Cincinnati, has plans for a new one-story factory on the Paddock Road, estimated to cost $300,000 with machinery. F. E. Berold is president.

The Columbus Railway, Power & Light Co., Columbus, Ohio, is disposing of a preferred stock issue of $1,350,000, a portion of the proceeds to be used for extensions and improvements. C. C. Slater is vice-president and general manager.

Ovens, power equipment, conveying and other machinery will be installed in the new plant to be constructed by the White Baking Co., Dayton, Ohio, at 709-33 Webster Street, to cost $115,000.

The C. C. Collins Co., 250 Poplar Street, Memphis, Tenn., manufacturer of hoisting machinery, has tentative plans for a one-story foundry and machine shop to cost about $30,000. A site has been secured on the Belt Line Railroad.

The Joseph G. Hall Mfg. Co., 149 Mallory Street, Memphis, Tenn., has plans for a one-story factory, 80 x 100 ft., for the manufacture of mill work specialties, to cost $35,000 with equipment.

The City Council, Hamilton, Ohio, is preparing plans for its proposed municipal electric light and power house, estimated to cost $525,000, for which bids will be asked in the near future. Froelich & Emery Engineering Co., Toledo, Ohio, is engineer.

The Kentucky Power Co., Brooksville, Ky., has acquired the plant of the Carrollton Ice Co., Carrollton, Ky. Extensions and improvements are planned to cost about $50,000.

The Erwin Feldspar Corporation, Erwin, Tenn., recently acquired by the Golding Sons' Co., Trenton, N. J., has acquired through its president, Herbert P. Margerum, a power site on the Nolichucky River, near Johnson City, Tenn., and plans a hydroelectric power development, to be used in part for the operation of its mill. The company also contemplates extensions in the grinding facilities at the Erwin mill.

Milwaukee

MILWAUKEE, April 19.

GENERAL industrial activity, as it relates to demand for machine tools, is well maintained. While automotive shops are less active in the tool market, other lines continue to produce fresh orders in a relatively favorable volume. Milling machine makers have booked some orders from railroads and are not deeply concerned with slackening in automotive demand. Local industries continue to expand moderately and are furnishing the tool trade steady business.

The Quality Aluminum Casting Co., 100 Lincoln Avenue, Waukesha, Wis., has placed contracts for a shop addition, 80 x 280 ft., which will enlarge the dimensions of the main building to 120 x 400 ft. Inquiry is being made for furnace and crane equipment and other needs.

The Western Metal Specialty Co., Inc., 3020 Calhoun Place, Milwaukee, has broken ground for an addition, costing about $30,000 with equipment, to handle new business, including a contract for sheet metal stampings for the General Motors Corporation. It also manufactures general industrial stampings and a number of sanitary and heating specialties. Julius J. Goetz is president and general manager.

The Seaman Body Corporation, 1723 Richards Street, Milwaukee, affiliated with the Nash and Ajax Motors companies, Kenosha, Racine and Milwaukee, is taking bids for another manufacturing extension, 100 x 172 ft., five stories. During the past year a unit increasing the original capacity 100 per cent was erected, and the new construction will effect an increase of 35 to 40 per cent, largely in the sheet metal department. W. J. Iwer is general superintendent.

The International Harvester Co. branch at Madison, Wis., is to be enlarged by the construction of a new building, 120 x 130 ft., one story and part basement, to house the motor truck sales and service division. Plans are being completed by Chicago architects and bids will be taken about April 26 by W. D. Price, superintendent of construction, 606 South Michigan Avenue, Chicago.

The Burrell Engineering & Construction Co., 513 West Jackson Boulevard, Chicago, has taken the general contract to build a new elevator E for the Chicago, Milwaukee & St. Paul Railway at Milwaukee, to replace the grain warehouse burned in June, 1924. The work will cost $500,000 and will require a large list of machinery, conveyors, motors, etc. N. H. LaFountain, Union Station, Chicago, is supervising the project as engineer of buildings.

The Stolper Steel Products Co., 3300 Fond du Lac Avenue, Milwaukee, automotive stampings, and formerly known as the A. B. & B. Sheet Metal Works, let the general contract to Henry Danischefsky, 1484 Humboldt Avenue, local, for a one-and two-story addition, 35 x 130 ft. The architect is Herman J. Esser, Camp Building, Milwaukee. Charles Stolper is president.

Oskaloosa, Iowa, interests have acquired a major share in the ownership of the Turner-Simplicity Co., Cedarburg, Wis., manufacturer of farm engines, and are moving the entire operation to Oskaloosa. A new Iowa corporation, the Turner-Simplicity Mfg. Co., has been formed with $250,000 capital. Lee M. Turner, formerly president and general manager of the Wisconsin concern, becomes a director in the new organization. C. M. Porter is president, and J. W. Williams, secretary.

The Milwaukee Brass Specialty Co., 3200 Senator Avenue, Milwaukee, has started work on a one-story manufacturing addition, 30 x 100 ft., the general contract having been let to Robert Kirckhahn, 823 Forty-seventh Street.

The Wisconsin State Board of Control, Madison, has instructed Arthur Peabody, State architect, to prepare plans for a $75,000 upper grade vocational school and a $40,000 older boys' home at the State School for Dependent Children at Sparta, Wis. Bids will be taken until May 10 by A. W. Bayley, secretary, Madison.

The Common Council, Antigo, Wis., will take bids until April 21 for the construction and equipment of a complete new sewage disposal plant and system designed by the Jerry Donohue Engineering Co. of Sheboygan, Wis. It will cost about $50,000.

The Waukesha, Wis., Board of Education has accepted the bid of Pehrson Brothers, 555 Temple Court, Minneapolis, Minn., for erecting the first unit of the new junior high and vocational training institute at $144,788. The work will cost about $225,000. The architects are Parkinson & Dockendorff, LaCrosse, Wis.

Gurda & Gurda, architects, 484 Mitchell Street, Milwaukee, have been engaged by unidentified interests to prepare plans for a manufacturing building at Twenty-second and Clybourn Streets. An investment of about $75,000 is planned.

Pittsburgh

PITTSBURGH, April 19.

AN inquiry from the Pennsylvania Railroad for six tools, chiefly for its Altoona shops, marks the first railroad inquiry in some time. The general machine tool business is steady, and most dealers state that this month's business compares favorably with the same period in March.

A recent fire in the conduit shop of the Central Tube Co., Economy, Pa., will not seriously interfere with that line of the company's business. The damage done was slight and work of rebuilding is under way.

Bids will be asked this month by the Hookless Fastener Co., Cottage and Cherry Streets, Meadville, Pa., manufacturer of metal specialties, for its proposed new plant, consisting of two buildings, to cost $200,000 with machinery. Wilbur Watson & Associates, 4614 Prospect Avenue, Cleveland, are architects and engineers. Lewis Walker is president.

The Pennsylvania Railroad Co., Pittsburgh, has awarded contracts to the T. J. Foley Co., 424 Fourth Avenue, for extensions and improvements in its scrap dock at Conway, Pa., to cost about $25,000; for an additional yard with shop and other buildings at Wierton, W. Va., to cost $130,000; and for remodeling and extensions in its warehouse and distributing buildings at Pittsburgh, to cost $100,000.

The Ready Mixed Concrete Co., Pittsburgh, has taken out a permit for a one-story plant at South Twenty-second Street and Merriman Way. Mixing, conveying and other equipment will be installed.

The West Penn Cement Co., Butler, Pa., recently formed under State laws with C. F. Hosford, Jr., treasurer, is beginning the construction of its proposed mill at West Winfield, near Butler, where 2000 acres has been acquired. The initial unit is reported to cost close to $1,200,000, and is scheduled to be ready for service in January.

The Universal Glass Products Co., Parkersburg, W. Va., manufacturer of bottles and kindred products, has plans for rebuilding its factory at Parmaco, near Parkersburg, recently partially destroyed by fire with loss of about $50,000. Automatic bottle machinery and auxiliary equipment will be installed.

The Guyan Machine Shops, Logan, W. Va., machinery dealer, has been inquiring for a boring mill, with horizontal table about 30 x 36 in.; also for a mica cutting machine, and a punch and shear.

Fire, April 9, destroyed a portion of the planing mill of W. J. Rose & Son, Johnstown, Pa., with loss reported at $150,000 including machinery. Plans for rebuilding are under advisement.

J. T. & A. Hamilton, Inc., Twenty-sixth Street and the Allegheny Valley Railroad, manufacturer of bottles, etc., has awarded a general contract to the Thomas Coutts Co., 332 Smallman Street, for a one-story addition, 85 x 120 ft., to cost $75,000.

The Moundsville Independent School District, Moundsville, W. Va., plans the installation of manual training equipment in a proposed addition to the local junior high school, estimated to cost $120,000.

The J. Feigenbaum Co., 128 Fifth Avenue, Pittsburgh, is asking bids on general contract for a six-story and basement automobile service, repair and garage building, to cost $185,000 with equipment.

The Harwick Coal & Coke Co., 435 Sixth Avenue, Pittsburgh, is said to be planning the installation of mechanical safety equipment and operating machinery at its mining properties at Harwick, Pa.

Hall-Will, Inc., Erie, Pa., recently incorporated, will manufacture power pipe-threading machines, concentrating for the present on the building of a portable unit for use by the plumbing trade and in some departments of industrial plants. It is planned later to market a line of 4-in. and 6-in. pipe-threading machines. The president of the company is Leslie S. Hall, formerly vice-president and general manager of the Williams Tool Corporation, Erie, Pa.

South Atlantic States

BALTIMORE, April 19.

CONTRACT has been let by the McNamara Brothers Co., Kloman Avenue, Westport, Baltimore, manufacturer of boilers, tanks, etc., to Mason, Curley & Breedy, 308 West Madison Avenue, for a one-story addition, 73 x 100 ft., to cost $25,000. Sandlass & Wiemon, 351 St. Paul Street, are architects. R. J. McNamara is president.

The Thornton Motor Co., Delaware Trust Building, 903 King Street, Wilmington, Del., recently organized under State laws with a capital of $5,000,000, has concluded negotiations for the purchase of about 20 acres at Washington Park, New Castle, Del., near the works of the American Manganese Steel Co., as a site for a new plant for the manufacture of small closed-in front wheel drive automobiles and parts. Plans are being drawn for the initial plant.

The Norfolk & Western Railway Co., N. & W. Building, Roanoke, Va., has awarded a contract to the J. P. Pettyjohn Co., 212 Eighth Street, Lynchburg, Va., for a one-story machine shop at its East End yard, Roanoke, 100 x 200 ft., to replace a structure recently destroyed by fire. It will cost about $50,000 with equipment. A traveling crane will be installed.

The Taylor-Parker Co., Water Street and Commerce Place, Norfolk, Va., has inquiries out for a stationary engine, Erie City, center crank type, about 10 x 15 in.

W. N. Reynolds, Winston-Salem, N. C., and associates have plans for a one-story automobile service, repair and garage building, 160 x 200 ft., estimated to cost $275,000 with equipment.

The Bainbridge Ice Co., Bainbridge, Ga., is arranging for extensions and improvements in its ice-manufacturing plant, including the installation of additional equipment. It is proposed to electrify the plant, replacing present steam-driven equipment. G. P. Goodloe is general manager.

The City Council, Hagerstown, Md., plans the installation of a pumping plant on the Potomac River in connection with proposed extensions and improvements in the municipal waterworks, estimated to cost $800,000. A bond issue is being arranged.

The Winston-Salem Chair Co., Winston-Salem, N. C., has plans for a new unit on Claremont Avenue, to cost approximately $150,000 including machinery.

Oliver Carter, Wilmington, N. C., has inquiries out for a well-drilling machine, Armstrong type.

The Board of Education, Smithfield, N. C., plans the installation of manual training equipment in its proposed new Cleveland high school, to cost $150,000, for which work will soon begin. Charles C. Hook, Johnston Building, Charlotte, N. C., is architect.

The Board of Town Commissioners, Trappe, Md., is considering the installation of pumping machinery in connection with a proposed municipal waterworks. Kastenhuber & Anderson, Easton, Md., are engineers.

R. P. Johnson, Wytheville, Va., machinery dealer, has inquiries out for a 75-hp. stationary engine, slide valve type, side and center crank; also for one 80-hp. horizontal return tubular boiler, to operate at 100 lb. working pressure.

The Board of School Trustees, Dunn, N. C., is considering the installation of manual training equipment in its proposed new high school estimated to cost $115,000, for which foundations will soon be laid.

The Georgia Ice Co., Savannah, Ga., has work under way on enlargements in its ice-manufacturing plant at Thirty-first and West Board Streets, with the installation of automatic machinery and other equipment. W. F. Robertson is secretary.

The Standard Stove & Range Co., Rome, Ga., has begun the erection of a one-story plant at Rome, Ga., with main unit, 100 x 300 ft., and several smaller structures, reported to cost $70,000, of which close to one-half will be used for equipment, including molding machines, tumbling barrels, mills, sheet-metal working equipment and auxiliary equipment. E. P. Grant is general manager.

The Pasquotank County Board of Education, Elizabeth City, N. C., is considering the installation of manual training equipment in a proposed central high school to cost $80,000, for which superstructure will soon begin. Leslie N. Boney, Murchison Building, Wilmington, N. C., is architect.

The United States Shipping Board, Washington, has preliminary plans for extensions and improvements in its army supply base terminals at Norfolk, Va., to cost about $200,000 including equipment. The work will include betterments in present warehouses and the installation of material-handling machinery.

The City Council, Longview, N. C., is considering the installation of pumping machinery in connection with a proposed municipal waterworks and sewage system to cost $65,000. A special election will be held in May to vote bonds. J. R. Abee is city clerk.

The Hackley-Morrison Co., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for a planer, pony type, 20 to 24-in., for surfacing material on one side.

The Board of Education, Franklin County, Louisburg, N. C., plans the installation of manual training equipment in its proposed new high school to cost $120,000, for which plans have been drawn by M. S. Davis, Louisburg, architect.

The Goodyear Tire & Rubber Co., Akron, Ohio, is completing plans for the installation of additional equipment in its mill at Cedartown, Ga., recently acquired from the Cedartown Cotton & Export Co., and will develop increase in output. Later it is proposed to construct an additional mill unit. Lockwood, Greene & Co., Atlanta, Ga., are architects and engineers.

Indiana

INDIANAPOLIS, April 19.

THE Honeyweel Mfg. Co., Wabash, Ind., manufacturer of valves and heating specialties, has awarded a general contract to Floyd Webb, Wabash, for an addition, 40 x 50 ft.

The Hercules Corporation, Morton Avenue, Evansville, Ind., manufacturer of oil and kerosene engines, parts, etc., has awarded a contract to the M. J. Hoffman Construction Co., Furniture Building, for a one-story addition, 50 x 300 ft., to cost about $70,000 with equipment. W. H. McCurdy is president.

The Hoosier Desk Co., Jasper, Ind., will soon take bids for a one-story addition, T-shaped, 60 x 150 ft., to cost $75,000 with equipment. Shopbell, Fowler & Thole, Furniture Building, Evansville, Ind., are architects and engineers.

The Board of Education, Valparaiso, Ind., plans the installation of manual training equipment in a new one and two-story and basement high school to cost $300,000, for which superstructure will soon begin. Perkins, Fellows & Hamilton, Tower Court, Chicago, are architects.

The Remy Electric Co., Anderson, Ind., a division of the General Motors Corporation, Detroit, has completed the erection of an addition, 233 x 520 ft., to be given over exclusively to the manufacture of automobile generators. A portion of the machinery has been removed from another building heretofore devoted to generator manufacture, and it is planned to install additional machinery in the available space for the production of Klaxon signal horns and kindred apparatus now being made by the company.

The Auburn Post Card Co. has preliminary plans under way for a one-story addition for extensions in the machine department, reported to cost $45,000.

The Walter Bates Steel Co., Gary, Ind., recently organized, has awarded a general contract to the General Construction Co., 477 Broadway, for the initial unit of its proposed local plant on site lately acquired, estimated to cost $80,000 with equipment.

The S. S. Cox Show Case Co., North Manchester, Ind., has tentative plans for a two-story and basement addition, 75 x 100 ft., to cost $35,000. It is expected to begin work during the summer. J. A. Brown is president.

Contract has been let by the Aladdin Mfg. Co., Muncie, Ind., manufacturer of electric lamps, to the Truscon Steel Co., Youngstown, for its proposed one-story addition, 80 x 90 ft., to cost $50,000. E. S. Spencer is president.

Pacific Coast

SAN FRANCISCO, April 14.

PLANS have been completed by Winslow Brothers, Santa Rosa, Cal., for the erection of a one-story machine and automobile repair shop, with department for car rebuilding, to cost $30,000. O'Brien Brothers, Inc., 315 Montgomery Street, San Francisco, is architect.

The Union Oil Co., Union Oil Building, Los Angeles, will begin the construction of a new combination compressor and absorption plant for gasoline production at its properties at Brea, Cal., to cost about $275,000 with machinery.

C. H. Snyder, 251 Kearny Street, San Francisco, engineer, has plans under way for a four-story automobile service, repair and garage building to cost $150,000 with equipment.

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Canada

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The Moundsville Independent School District, Moundsville, W. Va., plans the installation of manual training equipment in a proposed addition to the local junior high school, estimated to cost $120,000.

The J. Feigenbaum Co., 128 Fifth Avenue, Pittsburgh, is asking bids on general contract for a six-story and basement automobile service, repair and garage building, to cost $185,000 with equipment.

The Harwick Coal & Coke Co., 435 Sixth Avenue, Pittsburgh, is said to be planning the installation of mechanical safety equipment and operating machinery at its mining properties at Harwick, Pa.

Hall-Will, Inc., Erie, Pa., recently incorporated, will manufacture power pipe-threading machines, concentrating for the present on the building of a portable unit for use by the plumbing trade and in some departments of industrial plants. It is planned later to market a line of 4-in. and 6-in. pipe-threading machines. The president of the company is Leslie S. Hall, formerly vice-president and general manager of the Williams Tool Corporation, Erie, Pa.

South Atlantic States

BALTIMORE, April 19.

CONTRACT has been let by the McNamara Brothers Co., Kloman Avenue, Westport, Baltimore, manufacturer of boilers, tanks, etc., to Mason, Curley & Breedy, 308 West Madison Avenue, for a one-story addition, 73 x 100 ft., to cost $25,000. Sandlass & Wiemon, 351 St. Paul Street, are architects. R. J. McNamara is president.

The Thornton Motor Co., Delaware Trust Building, 903 King Street, Wilmington, Del., recently organized under State laws with a capital of $5,000,000, has concluded negotiations for the purchase of about 20 acres at Washington Park, New Castle, Del., near the works of the American Manganese Steel Co., as a site for a new plant for the manufacture of small closed-in front wheel drive automobiles and parts. Plans are being drawn for the initial plant.

The Norfolk & Western Railway Co., N. & W. Building, Roanoke, Va., has awarded a contract to the J. P. Pettyjohn Co., 212 Eighth Street, Lynchburg, Va., for a one-story machine shop at its East End yard, Roanoke, 100 x 200 ft., to replace a structure recently destroyed by fire. It will cost about $50,000 with equipment. A traveling crane will be installed.

The Taylor-Parker Co., Water Street and Commerce Place, Norfolk, Va., has inquiries out for a stationary engine, Erie City, center crank type, about 10 x 15 in.

W. N. Reynolds, Winston-Salem, N. C., and associates have plans for a one-story automobile service, repair and garage building, 160 x 200 ft., estimated to cost $275,000 with equipment.

The Bainbridge Ice Co., Bainbridge, Ga., is arranging for extensions and improvements in its ice-manufacturing plant, including the installation of additional equipment. It is proposed to electrify the plant, replacing present steam-driven equipment. G. P. Goodloe is general manager.

The City Council, Hagerstown, Md., plans the installation of a pumping plant on the Potomac River in connection with proposed extensions and improvements in the municipal waterworks, estimated to cost $800,000. A bond issue is being arranged.

The Winston-Salem Chair Co., Winston-Salem, N. C., has plans for a new unit on Claremont Avenue, to cost approximately $150,000 including machinery.

Oliver Carter, Wilmington, N. C., has inquiries out for a well-drilling machine, Armstrong type.

The Board of Education, Smithfield, N. C., plans the installation of manual training equipment in its proposed new Cleveland high school, to cost $150,000, for which work will soon begin. Charles C. Hook, Johnston Building, Charlotte, N. C., is architect.

The Board of Town Commissioners, Trappe, Md., is considering the installation of pumping machinery in connection with a proposed municipal waterworks. Kastenhuber & Anderson, Easton, Md., are engineers.

R. P. Johnson, Wytheville, Va., machinery dealer, has inquiries out for a 75-hp. stationary engine, slide valve type, side and center crank; also for one 80-hp. horizontal return tubular boiler, to operate at 100 lb. working pressure.

The Board of School Trustees, Dunn, N. C., is considering the installation of manual training equipment in its proposed new high school estimated to cost $115,000, for which foundations will soon be laid.

The Georgia Ice Co., Savannah, Ga., has work under way on enlargements in its ice-manufacturing plant at Thirty-first and West Board Streets, with the installation of automatic machinery and other equipment. W. F. Robertson is secretary.

The Standard Stove & Range Co., Rome, Ga., has begun the erection of a one-story plant at Rome, Ga., with main unit, 100 x 300 ft., and several smaller structures, reported to cost $70,000, of which close to one-half will be used for equipment, including molding machines, tumbling barrels, mills, sheet-metal working equipment and auxiliary equipment. E. P. Grant is general manager.

The Pasquotank County Board of Education, Elizabeth City, N. C., is considering the installation of manual training equipment in a proposed central high school to cost $80,000, for which superstructure will soon begin. Leslie N. Boney, Murchison Building, Wilmington, N. C., is architect.

The United States Shipping Board, Washington, has preliminary plans for extensions and improvements in its army supply base terminals at Norfolk, Va., to cost about $200,000 including equipment. The work will include betterments in present warehouses and the installation of material-handling machinery.

The City Council, Longview, N. C., is considering the installation of pumping machinery in connection with a proposed municipal waterworks and sewage system to cost $65,000. A special election will be held in May to vote bonds. J. R. Abee is city clerk.

The Hackley-Morrison Co., 1708 Lewis Street, Richmond, Va., machinery dealer, has inquiries out for a planer, pony type, 20 to 24-in., for surfacing material on one side.

The Board of Education, Franklin County, Louisburg, N. C., plans the installation of manual training equipment in its proposed new high school to cost $120,000, for which plans have been drawn by M. S. Davis, Louisburg, architect.

The Goodyear Tire & Rubber Co., Akron, Ohio, is completing plans for the installation of additional equipment in its mill at Cedartown, Ga., recently acquired from the Cedartown Cotton & Export Co., and will develop increase in output. Later it is proposed to construct an additional mill unit. Lockwood, Greene & Co., Atlanta, Ga., are architects and engineers.

Indiana

INDIANAPOLIS, April 19.

THE Honeyweel Mfg. Co., Wabash, Ind., manufacturer of valves and heating specialties, has awarded a general contract to Floyd Webb, Wabash, for an addition, 40 x 50 ft.

The Hercules Corporation, Morton Avenue, Evansville, Ind., manufacturer of oil and kerosene engines, parts, etc., has awarded a contract to the M. J. Hoffman Construction Co., Furniture Building, for a one-story addition, 50 x 300 ft., to cost about $70,000 with equipment. W. H. McCurdy is president.

The Hoosier Desk Co., Jasper, Ind., will soon take bids for a one-story addition, T-shaped, 60 x 150 ft., to cost $75,000 with equipment. Shopbell, Fowler & Thole, Furniture Building, Evansville, Ind., are architects and engineers.

The Board of Education, Valparaiso, Ind., plans the installation of manual training equipment in a new one and two-story and basement high school to cost $300,000, for which superstructure will soon begin. Perkins, Fellows & Hamilton, Tower Court, Chicago, are architects.

The Remy Electric Co., Anderson, Ind., a division of the General Motors Corporation, Detroit, has completed the erection of an addition, 233 x 520 ft., to be given over exclusively to the manufacture of automobile generators. A portion of the machinery has been removed from another building heretofore devoted to generator manufacture, and it is planned to install additional machinery in the available space for the production of Klaxon signal horns and kindred apparatus now being made by the company.

The Auburn Post Card Co. has preliminary plans under way for a one-story addition for extensions in the machine department, reported to cost $45,000.

The Walter Bates Steel Co., Gary, Ind., recently organized, has awarded a general contract to the General Construction Co., 477 Broadway, for the initial unit of its proposed local plant on site lately acquired, estimated to cost $80,000 with equipment.

The S. S. Cox Show Case Co., North Manchester, Ind., has tentative plans for a two-story and basement addition, 75 x 100 ft., to cost $35,000. It is expected to begin work during the summer. J. A. Brown is president.

Contract has been let by the Aladdin Mfg. Co., Muncie, Ind., manufacturer of electric lamps, to the Truscon Steel Co., Youngstown, for its proposed one-story addition, 80 x 90 ft., to cost $50,000. E. S. Spencer is president.

Pacific Coast

SAN FRANCISCO, April 14.

PLANS have been completed by Winslow Brothers, Santa Rosa, Cal., for the erection of a one-story machine and automobile repair shop, with department for car rebuilding, to cost $30,000. O'Brien Brothers, Inc., 315 Montgomery Street, San Francisco, is architect.

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Western Canada

C. J. McAllister, 1145 Seymour Street, Vancouver, B. C., will build an addition to his spring shop, and has awarded a general contract to Bedford Davidson, 1012 Broughton Street.

The John East Iron Works, Avenue C, Saskatoon, Sask., will build an addition to the foundry.

The Weiner-Brownell Paper Mills, Ltd., Winnipeg, has started construction work on mills at St. Boniface, Man. B. W. Parker, 624 Union Bank Building, Winnipeg, is engineer.

Trade Changes

The Brass & Copper Sales Co. has been incorporated under the laws of Missouri, with $25,000 capital stock, of which $16,000 is paid up, to act as sales agent for the Rome Brass & Copper Co., Rome, N. Y., at 1712-14 Locust Street, St. Louis. H. P. Hubbell is president, J. D. Sharp, vice-president, and Howard H. Hubbell, secretary-treasurer, all being members of the firm of Hubbell & Sharp, whose offices have been removed from the Chemical Building to the Locust Street address. G. B. Leitch has been made manager of the Brass & Copper Sales Co., which will carry a complete stock of the Rome products.

W. L. Schellenbach, engineer, Second National Bank Building, Cincinnati, on April 15 moved his office to rooms 611 and 612 in that building, where better facilities are provided for his work.

Manly R. Burgin, iron and steel scrap, Cleveland, has removed his office to 1435 Engineers Bank Building.

Rupp, Moore Co., Inc., Philadelphia, now represents the Columbia Steel & Shafting Co., Pittsburgh, instead of the Lancaster Steel Products Corporation, Lancaster, Pa., which is discontinuing operations. An office has been opened at 280 Madison Avenue, New York, in charge of C. M. Blaney, manager, formerly Boston manager for the Lancaster Steel Products Corporation, to serve the New York territory. The Rupp, Moore Co., Inc., was organized in 1920 by Thomas J. Moore, who previous to that time was resident manager of the Halcomb Steel Co. It handles cold-finished steel, H-M tool and alloy steels, also cold-drawn mechanical seamless steel tubing, manufactured by the Delaware Seamless Tube Co., Auburn, Pa.

John A. Savage & Co., pig iron and iron ore dealers, have removed their pig iron sales office from 822 Dixie Terminal Building, Cincinnati, to the main office at Hamilton, Ohio.

The Zenith Foundry Co., Milwaukee, a newly organized concern, has taken over the former plant of the West Allis Iron Works, Elm Street and Seventy-fifth Avenue. Incorporators are W. R. Tanner, Edward T. Freeman and Clarence H. Muller. The plant consists of a building 100 x 120 ft. and has a capacity of about 25 tons a day.

The M. A. Hanna Co. has removed its Detroit offices to room 1426 Buhl Building, effective April 1.

The Cincinnati Engineering Tool Co., 4659 Spring Grove Avenue, Cincinnati, manufacturer of automatic chucking machines, has appointed the Reed-Prentice Co., Worcester, Mass., as sales agent in southern New York and New England, and Charles C. Gordon, 126 Wisconsin Street, Milwaukee, as direct sales agent in Wisconsin.

The National Foundry Co., Erie, Pa., has established a Pittsburgh district office, for the sale of steel castings and machine cut gears, at 1401 First National Bank Building, in charge of E. C. Grandin and W. J. Flanagan.

Commencing April 22 the name of the Federal Machine & Gear Co., Cleveland, will be changed to the Federal Gear, Inc., of the same address.

Plant, inventory and good will of the Corliss Co., Bradford, Pa., have been taken over by the National Carbon Co., Inc., East St. Louis, Ill, effective April 1, according to announcement by P. P. Huffard, vice-president and general manager, National Carbon Co. J. F. Kerlin, president Corliss Co. under the old ownership, became a vice-president of the National Carbon Co. in charge of the sales of all carbon products. Mr. Kerlin, before his association with the Corliss Co., had been assistant general sales manager of the National Carbon Co. The addition of the Corliss Co. is another step in the policy of developing and supplying a complete line of carbon products, and will involve no change in the policies or methods of handling the accounts of the National Carbon Co. The Corliss grades will continue to be made in the factory at Bradford, Pa., under the same management and by the same people as in the past.

THE LAST WORD

"I DON'T believe there is an industry in which information is exchanged more freely than in ours," the works manager of an automobile company said to me the other day. And it is true, for the plants and methods of most automotive manufacturers are open to inspection by the public and competitors alike.

Is it not likely that this cooperative spirit has contributed greatly toward the tremendous growth of the industry? The country supplied the demand, but the automobile makers had to bring costs down to the pocketbook level of that "demand."

In American industry the old-country "trade secret" idea, if not dead, is fast sinking. The plant with the armed guard is the exception. The "Stay Out—This Means You" sign is passée.

If there is any thought in your mind that the steel industry is not up to date in this respect, read in this issue how the open-hearth superintendents swapped notes in Chicago last week.

Just one hundred years ago last Saturday the Mohawk & Hudson Railroad Co. was granted a charter to lay the first American railroad. The authorized capital was $300,000, *to be increased to* $500,000, *if necessary.*

It proved to be more than necessary, for the New York Central, the great-grandchild of the old Mohawk & Hudson, represents an investment of a billion and a quarter.

Train speeds have increased a little, too. The original De Witt Clinton train could attain the terrific speed of 30 *miles an hour, on level ground, while the famous "Century" can do* 80, *on the level or upgrade.*

During the past several years it has been declared at divers times by divers authorities that "the building boom is over." Figures for the first three months of the year indicate that the end is not yet. In fact, they reveal a positive gain over last year. The totals, as given by Bradstreet's, are: $839,540,404 for the first quarter of 1926, and $826,859,914 for the same period in 1925.

Apparently the article "Fair Prices for Fair Profits," in THE IRON AGE *Jan.* 28, *touched upon a subject close to the hearts of American manufacturers, for requests were received for more than* 8000 *copies of a reprint of it.*

The pleasure of taking an order away from a competitor is hollow if the price does not provide for a reasonable margin of profit.

Incidentally the author of the article, W. L. Churchill, is going to address the National Machine Tool Builders' Association at its spring convention, and pricing for profit will be discussed.

If advertising can make a man wear a certain brand of underwear, why can't it make him "safety-conscious?" The answer is that it can and it does.

"Safety first" campaigns have cut the accident rate in industry by big fractions. Machinery was guarded, and the educational work was started. Frankly, the latter was looked upon first as a fad, predestined to an early death. Instead, it met with marked success, and is recognized now as an investment that pays dividends.

A. H. D.